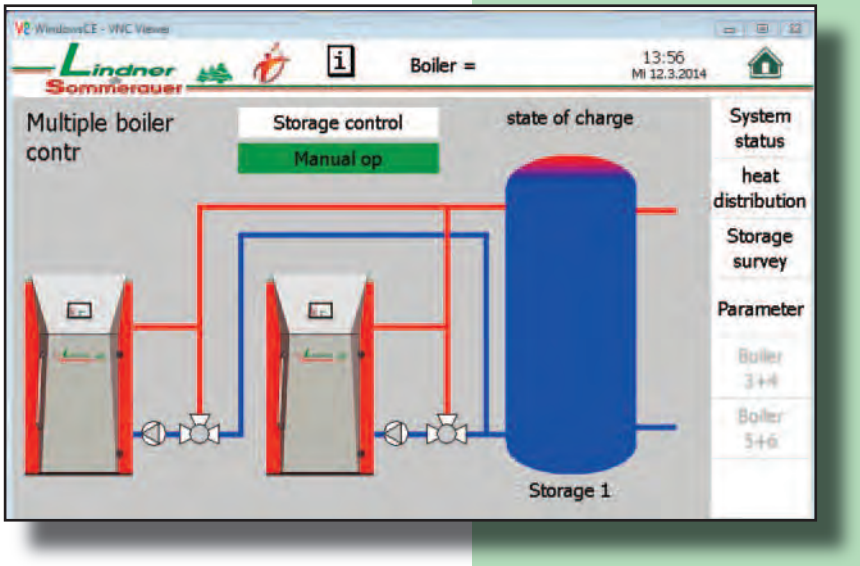
OPERATING INSTRUCTIONS

Multiple Boiler Control System

up to ...

6 Boilers
4 Storage units
24 DHW Tanks
16 Heating Circuits



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Edition 04/2014

Any modifications desired, or found any error gremlin tricks?

We are constantly striving to improve our documentation for you. Please support our efforts and let us know about any changes you would like to see under the following e-mail address: office@lindner-sommerauer.at

Edition 04/2014

We reserve the right to introduce changes in the course of technical developments without adjusting simultaneously this instructions manual.
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A Flowchart, Connection Diagram ....A

1

General Information

1.0 General Information

1.1 Limits of Use

With this multiple boiler control system you control up to ...

- Ⓐ ... 6 boilers
- Ⓑ ... 4 storage units (main storage)
- Ⓒ ... 24 DHW tanks (domestic water)
- Ⓓ ... 16 heating circuits (heating water)

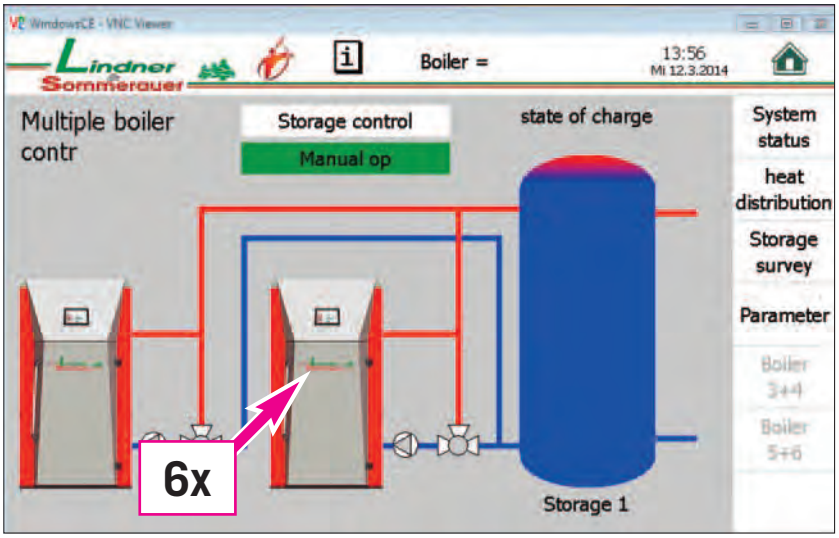


Fig. 1-010: Main menu, Boiler

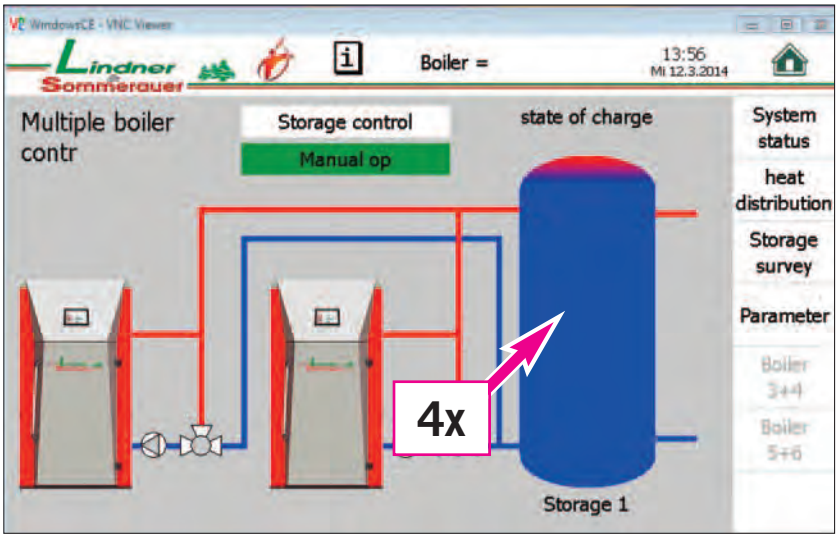


Fig. 1-020: Main menu, Storage

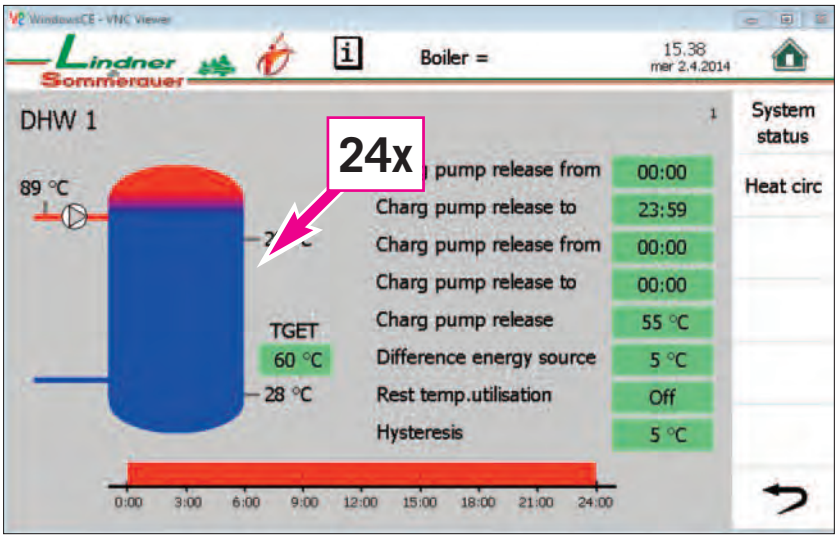


Fig. 1-030: Heat Distribution, DHW tank

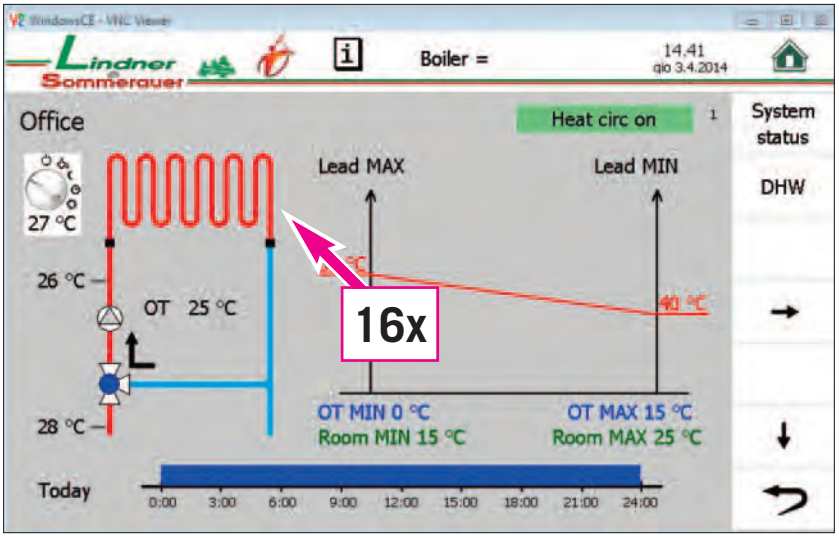


Fig. 1-040: Heat Distribution, heating circuit

1.2 Initial Commissioning

In order not to forfeit possible warranty claims, the multiple boiler control system may only be put into operation for the first time by an authorized person on the basis of the two commissioning check lists attached. This check list has to be confirmed by signature both by the commissioning person and by the customer and then returned to the manufacturer firm within eight days!

❶ Fill out check list
❷ Sign check list
❸ Send back check list within 8 days

1.3 Multiple Boiler Control System

The multiple boiler control system is controlled by a „Programmable Logic Controller" (PLC) with touchscreen operation.

1.4 Start-up of Control

When the control is supplied with electricity the "start-up" of the system is commenced. Wait (for about 30 sec) until the blue loading bar is filled. Then the main page of the control will show up.

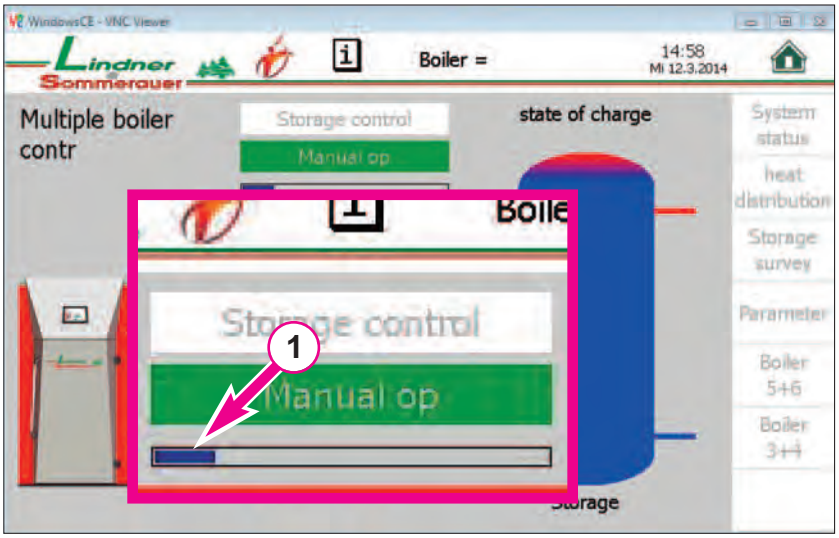


Fig. 1-050: Start-up of control

1.5 Enter Password

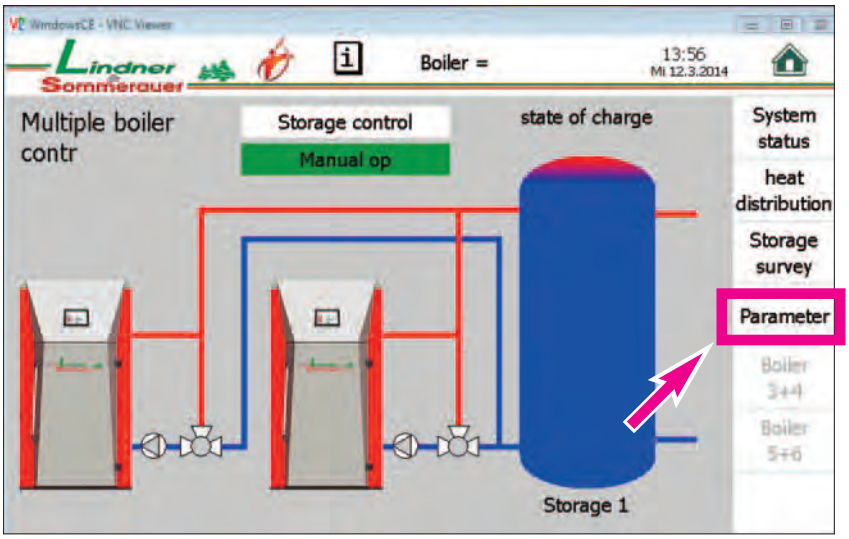


Fig. 1-060: Main menu

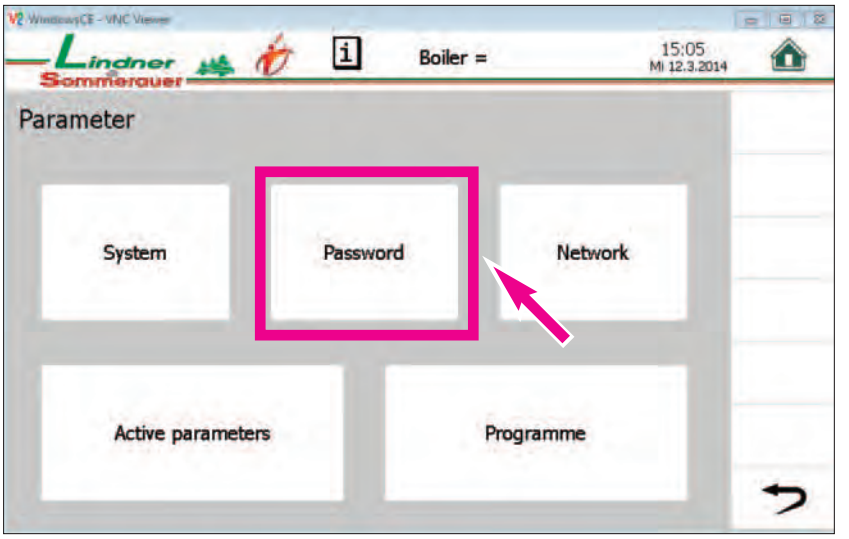


Fig. 1-070: Parameter, System/Network/Programme

When you are on the password page you can select which password you want to be changed.

1.5.1 Password Level

1.5.1 Password Level	
Designation	Password – Delivery
1. Level: Operator	0000 (alterable)
2. Level: Installer	0000 (alterable)
3. Level: Technician	0000 (alterable)
4. Level: System	(not alterable)

1.5.2 Enter Password

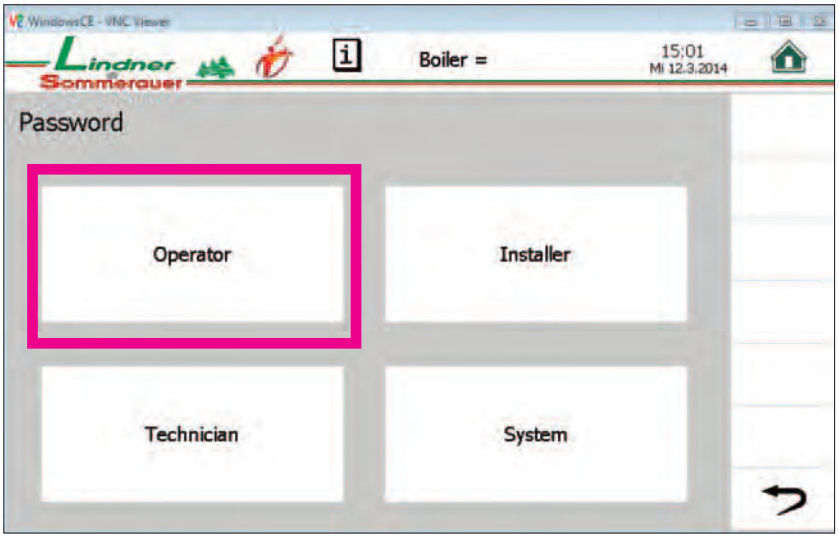


Fig. 1-080:System, Password Overview

Fig. 1-090: System, Enter password operator

1.5.3 Change password

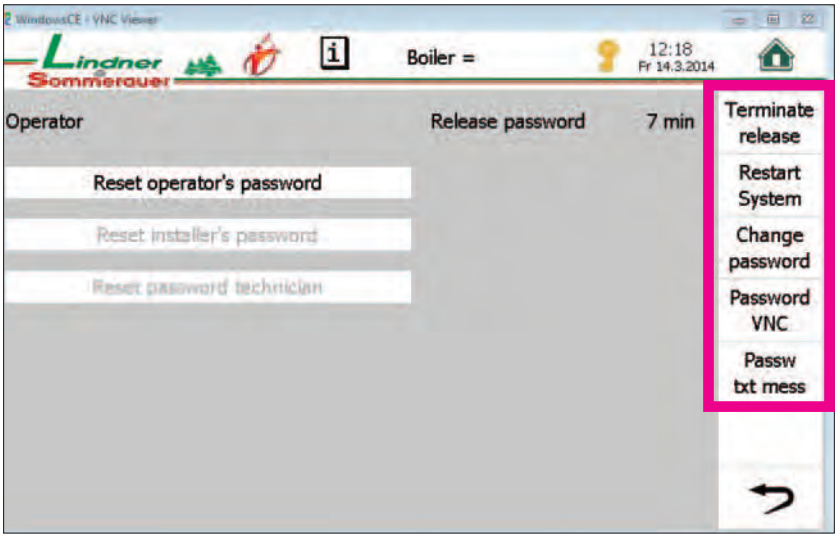


Fig. 1-100:System, Change password

Setting options	
Designation	**Erläuterung**
Terminate release	On clicking this button the release is terminated immediately. The release will be terminated automatically after 10 minutes. The key symbol shows that a release is effected.
Restart system	On clicking this button the touch control panel is restarted.
Change password	Here any password of your choice can be assigned. After entering the password twice the change is effected.
Password VNC	If remote monitoring via internet is installed, the password can be changed here.
Password SMS	If notification via mobile phone network is installed, the password can be changed here.

1.6 Select Country/Language

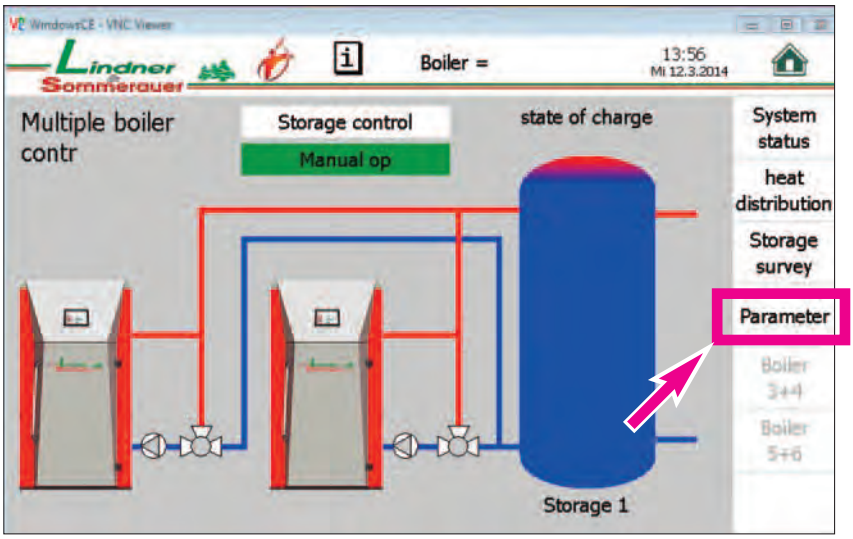


Fig. 1-110: Main menu

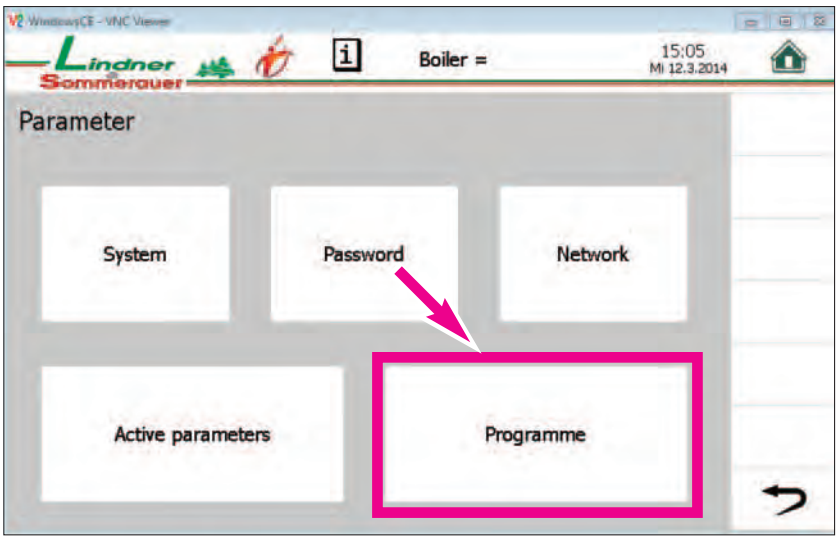


Fig. 1-120: Programme

1.6.1 Selection of Country

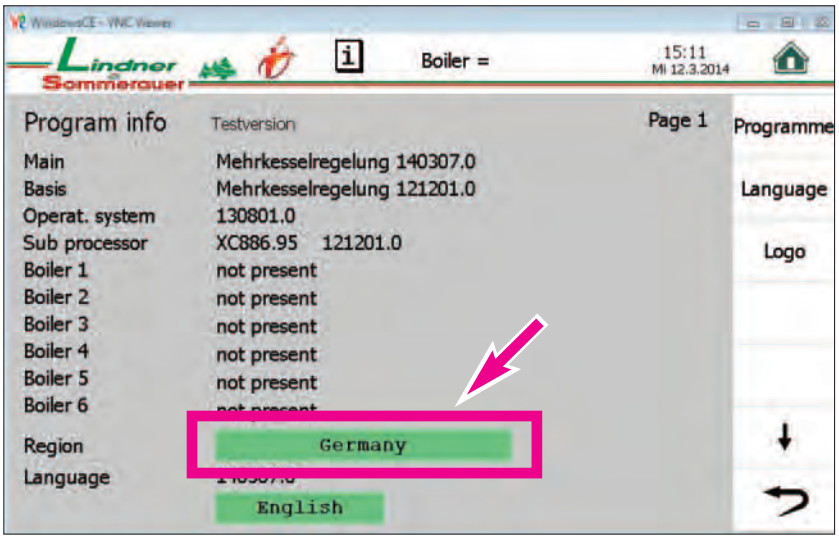


Fig. 1-130: Programme info

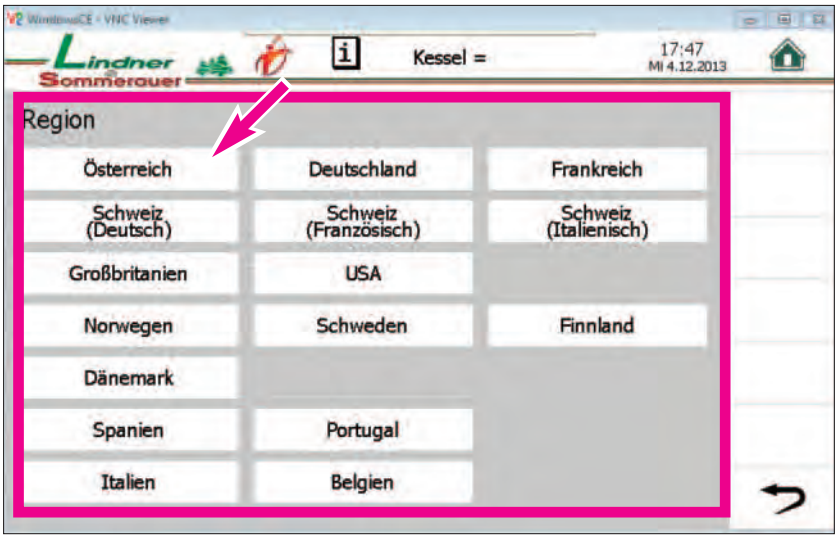


Fig. 1-140: Selection of country

1.6.2 Selection of Language

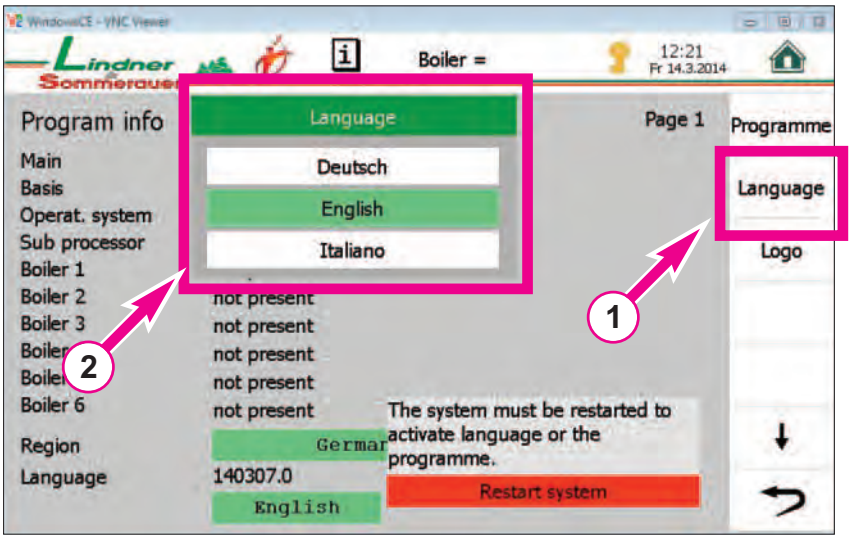


Fig. 1-150: Programme info, click button Language (1) and Language (2)

Back-up language

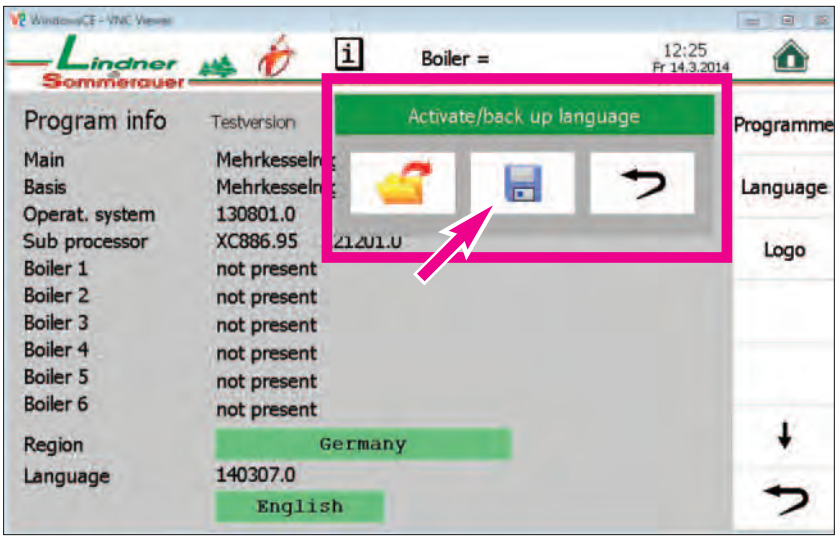


Fig. 1-160: Back-up language

1.6.3 Store programme

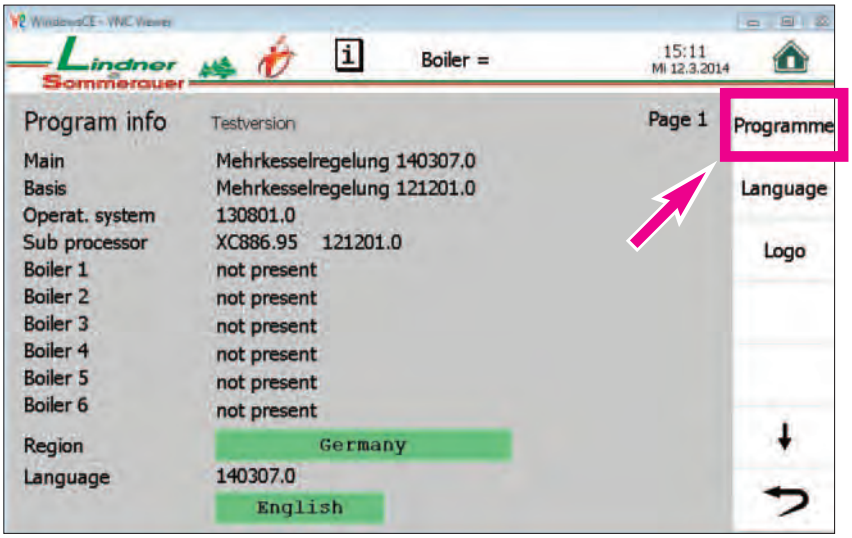


Fig. 1-170: Programme info, Programme

Activate programme

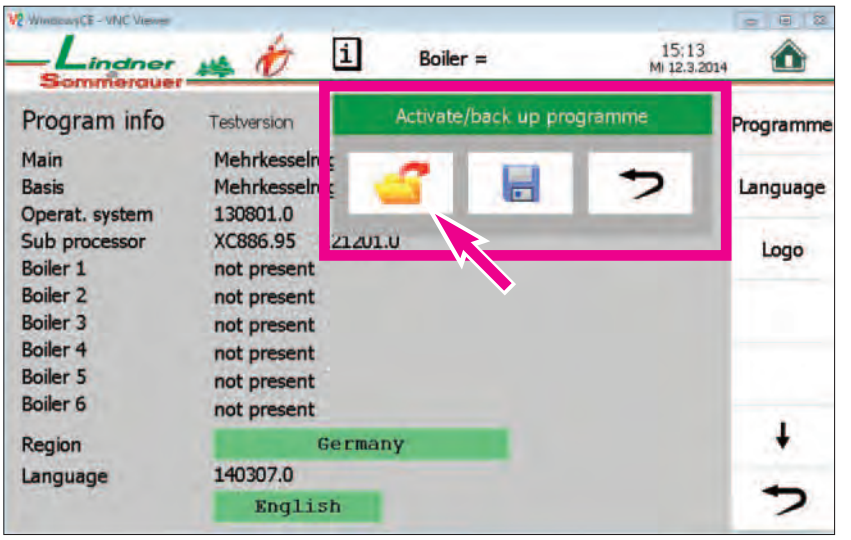


Fig. 1-180: Programme info, activate/store programme

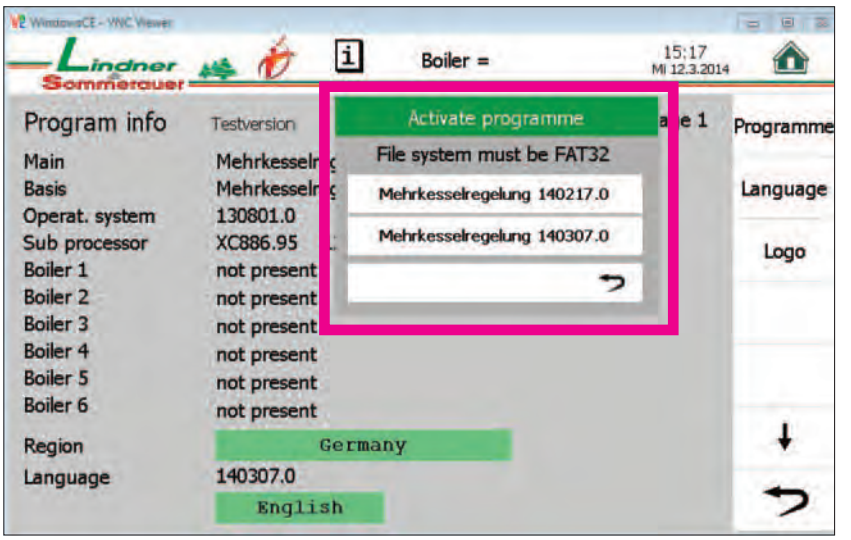


Fig. 1-190: Programme info, activate programme

Back-up programme

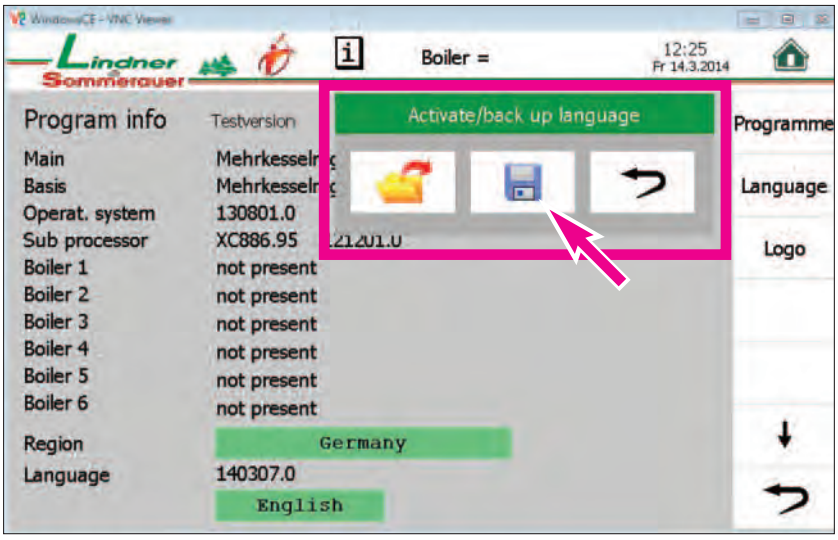


Fig. 1-200: Programme info, back-up programme

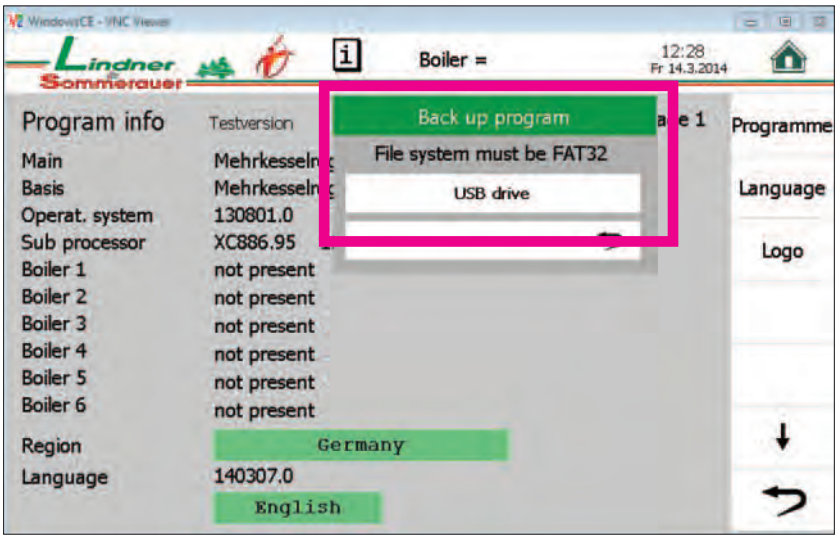


Fig. 1-210: Programme info, back-up programme

2

Outline

2.0 Outline

2.1 Upper Toolbar

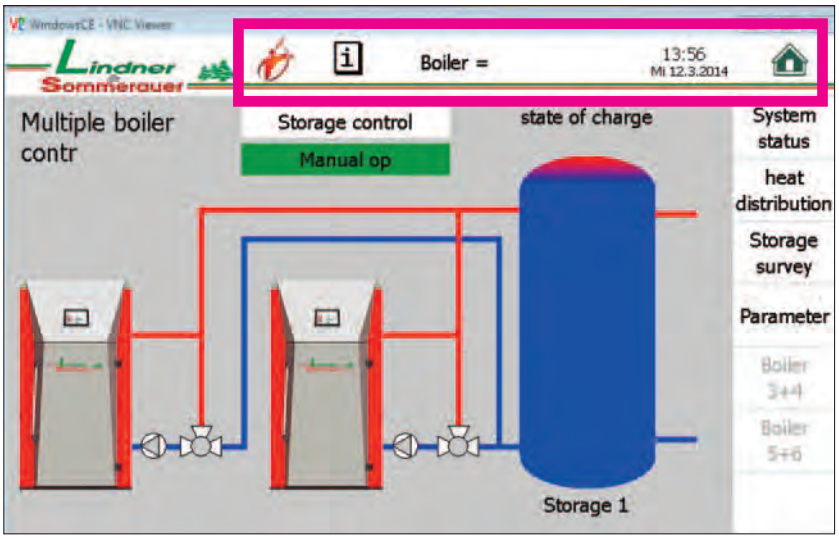


Fig. 2-010: Main menu - upper toolbar

Upper Toolbar		
Symbol	**Designation**	**Description**
	Touch Area Cleaning Button	Clicking on this symbol allows a cleaning procedure for the touch area to be executed for approx. 30 sec.
	Boiler information	By clicking on this symbol boiler information is displayed.
Boiler =	**Boiler temperature**	Readout of the temperature of the hottest boiler within the control system.
21:05 Di 10.12.2013	**Time/Date**	Display of time and date.
	Home Button	By clicking on this symbol you will get back to the main menu (start page) from each of the single pages.

2.1.1 Touch Area Cleaning Mode

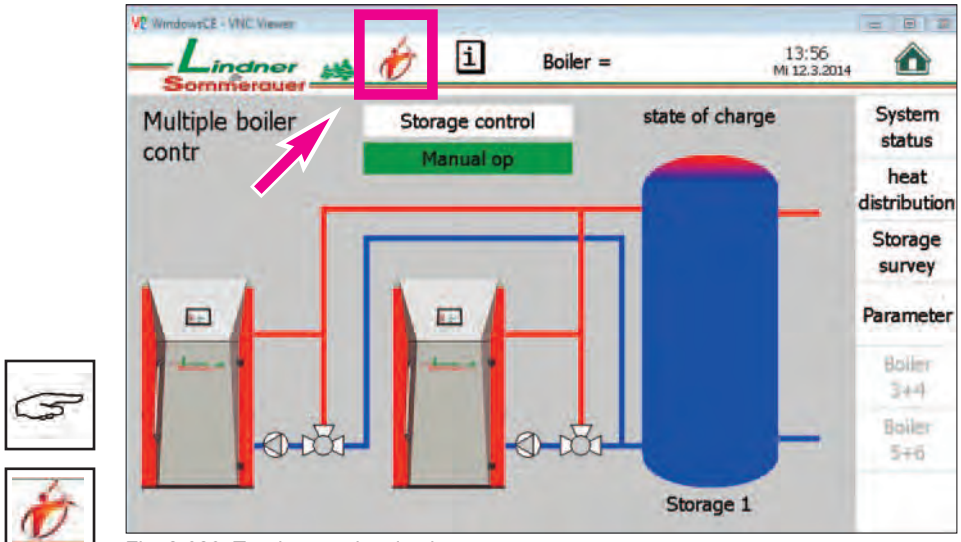


Fig. 2-020: Touch area cleaning button

❶ On clicking this button the screen will turn black for 30 seconds.

Fig. 2-030: Use any standard glass cleaner

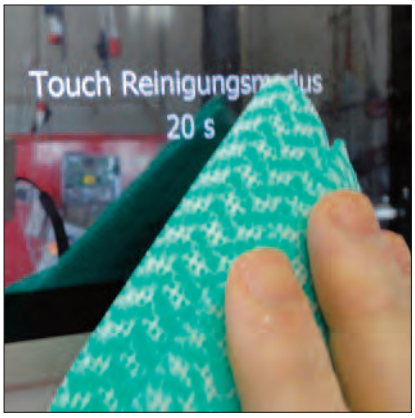


Fig. 2-040: Cleaning

❷ The touch surface can be cleaned during this time.

❸ After that interval the screen will continue to function as usual.

2.1.2 Boiler Infomation

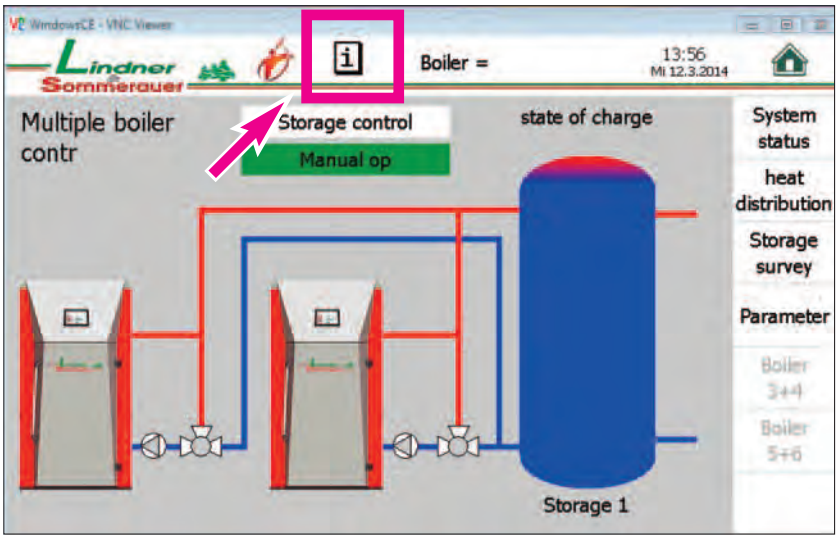


Fig. 2-050: Main menu

Depending on the operating status of the boiler the number and parameter type can differ.

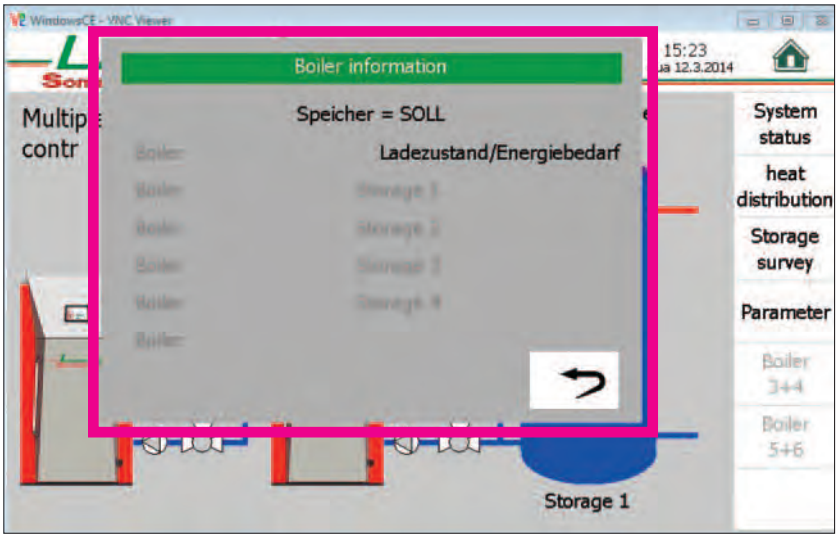
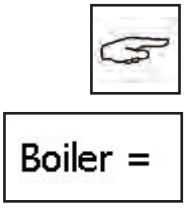


Fig. 2-060: Main menu, boiler information

2.1.3 Boiler Temperature



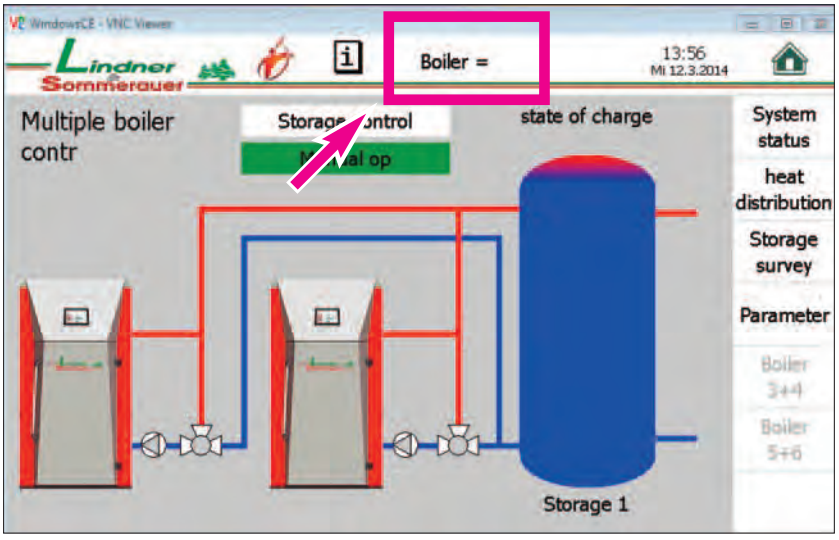


Fig. 2-070: Main menu

Readout of the current boiler temperature (1-6).

2.1.4 Date/Time

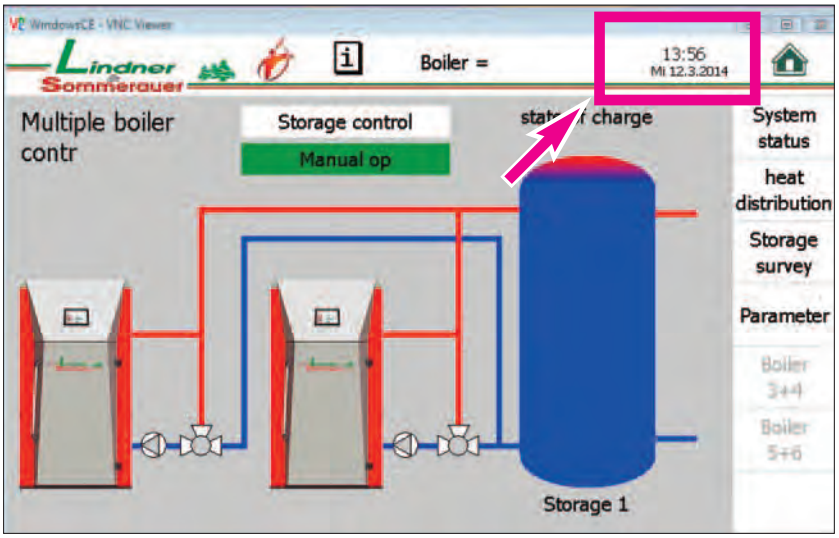


Fig. 2-080: Main menu

Display of date and time.

2.1.5 Home Button

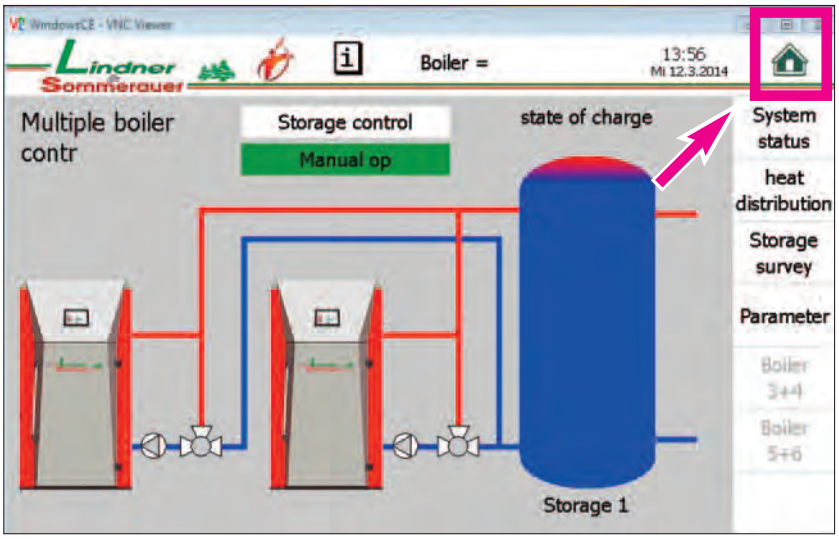
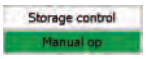


Fig. 2-090: Main menu, home button

By clicking on this symbol you will get back to the main menu (start page) from each of the single pages.

2.2 Touch Area

Touch area		
Symbol	**Designation**	**Description**
	Storage Control	By clicking on „Storage Control“ you activate the menu (green background = menu active).
	**Manual Operation**	By clicking on „Manual Op“ you activate the menu (green background = menu active).
	State of Storage **Charge1**	By clicking on this symbol you open the setting page of the storage.
	Boiler	By clicking on this symbol you open the setting page of the boiler.

2.2.1 Storage 1 (max. 4x)

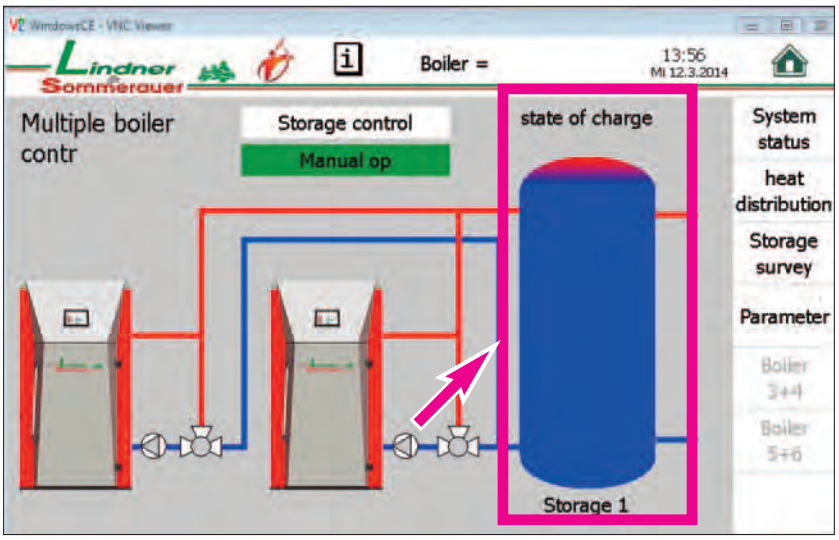


Fig. 2-100: Main menu

By clicking on the storage symbol you open the setting page of the storage.

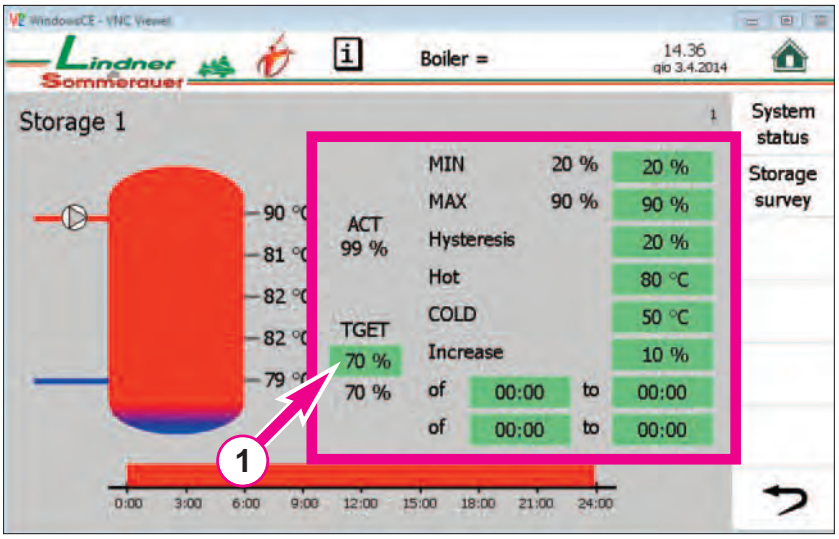


Fig. 2-110: Storage 1

Changing of values

❶ By clicking into one of the green-shaded fields a dialogue window will open with the opportunity to change values.

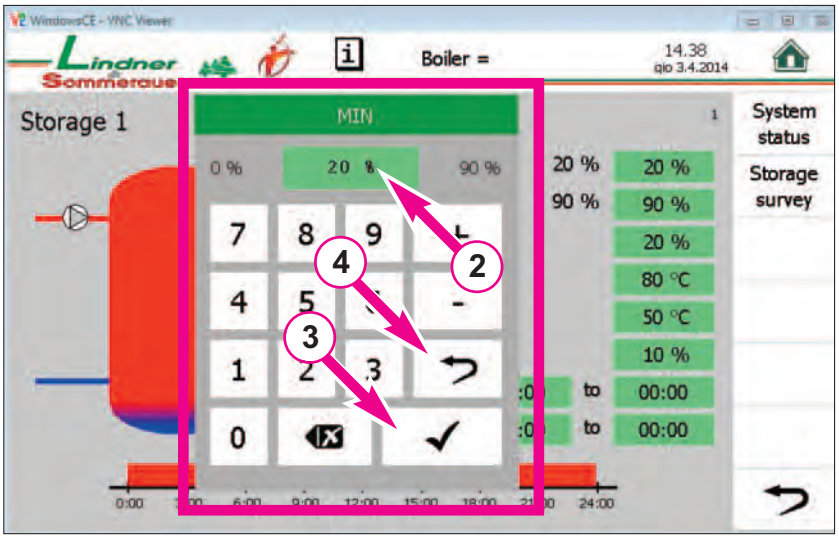


Fig. 2-120: Storage 1, click on individual value (1), enter (2), confirm (3)

❷ Change the value using the numeric keypad
❸ Save the value ..
❹ ... or leave the dialogue window without saving

Possible setting Storage 1		
Designation	**Setting option**	**Password level**
MIN	Min. 0 %, Max. 70 %	All (factory setting)
MAX	Min. 70 %, Max. 100 %	All (factory setting)
Hysteresis	Min. 0 %, Max. 80 %	All (factory setting).)
HOT	Min. 50°C, Max. 100°C	All (factory setting)
COLD	Min. 0°C, Max. 80°C	All (factory setting).)
Increase	Min. 0 %, Max. 100 %	All (factory setting).)
TARGET	Min. 20 %, Max. 90 %	All (factory setting)

2.2.2 Boiler (max. 6x)

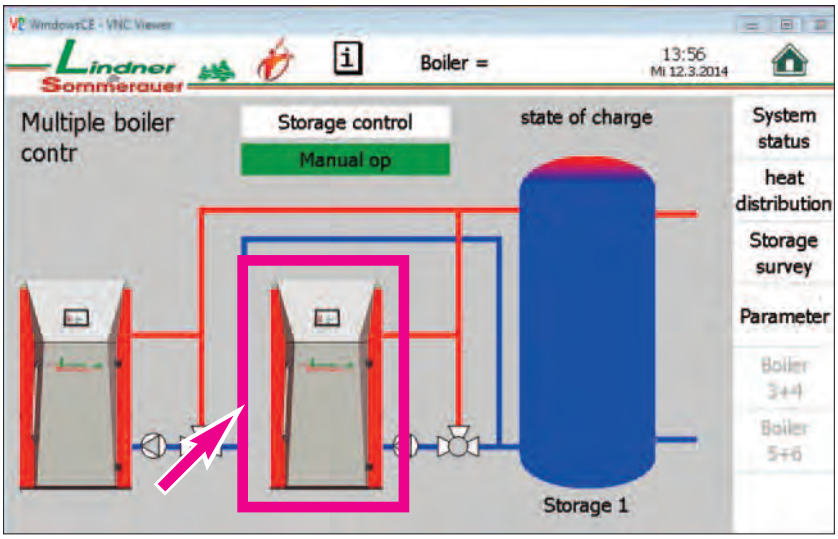


Fig. 2-130: Main menu

By clicking on the boiler symbol you open the setting page of the boiler.

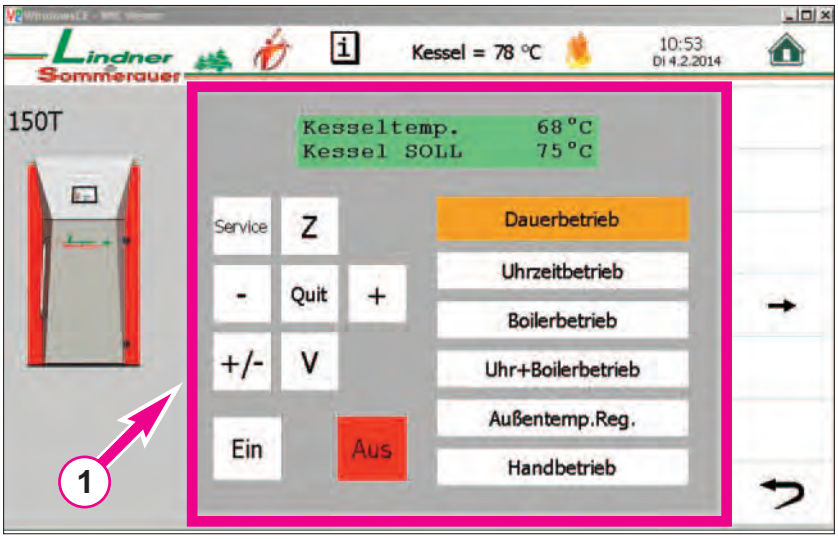


Fig. 2-140: Dialogue field boiler

For setting options see Operating Instructions of the corresponding boiler!

2.3 Right Navigation Bar

Right navigation bar		
Symbol	**Designation**	**Description**
System status	**System Status**	By clicking on this symbol you get an overview of all activated heating circuits and DHW tanks.
heat distribution	**Heat Distribution**	By clicking on this symbol you get to the heat distribution overview (e.g. heating circuits).
Storage survey	**Storage Overview**	By clicking on this symbol you get to the storage overview.
Parameter	**Parameters**	By clicking on this symbol you get to the overview of the system parameters.
Kessel 3+4	**Boiler 3+4**	By clicking on this symbol you get to boiler 3 + 4.
Kessel 5+6	**Boiler 5+6**	By clicking on this symbol you get to boiler 5 + 6.

2.4 Navigation Symbols – general

Navigation		
Symbol	**Designation**	**Description**
→	**Arrow to right**	By clicking on this symbol you scroll right.
←	**Arrow to left**	By clicking on this symbol you scroll left.
↑	**Arrow upwards**	By clicking on this symbol you scroll upwards.
↓	**Arrow downwards**	By clicking on this symbol you scroll downwards.
↩	**Level back**	By clicking on this symbol you: - go one level back - cancel without saving

2.4.1 Numeric Keypad

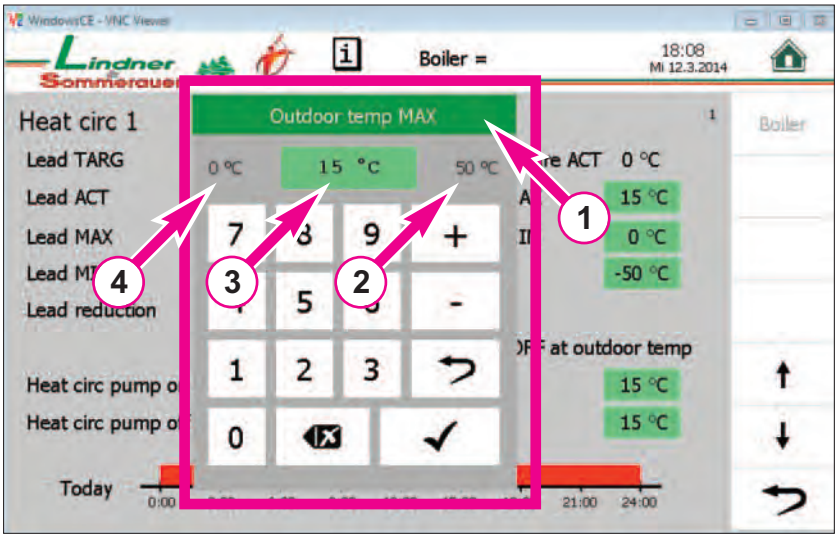


Fig. 2-150: Dialogue field – limit values

❶ Parameter designation
❷ Maximum possible input value
❸ Current setting
❹ Minimum possible input value

Setting options - Heating circuit 1		
Designation	**Description**	**Password level**
Feed flow MAX	Min. 15°C, Max. 30°C	All (factory set.)
Feed flow MIN	Min. 0°C, Max. 25°C	All (factory set.)

Dialogue field – Limit values		
Symbol	**Designation**	**Description**
	Level back	By clicking on this symbol the window is closed without saving..
5	**Numeric keypad**	By clicking on the corresponding number key you change the parameter settings in the dialogue window.
+	**Plus key**	By clicking on the + key you increase a value in the dialogue window (e.g. 5 gets 6)
-	**Minus key**	By clicking on the - key you decrease a value in the dialogue window (e.g. 5 gets 4)
	Delete input	By clicking on this symbol you delete the last number entered.
	Confirm	By clicking on this symbol you save the value entered.

2.4.2 Keyboard

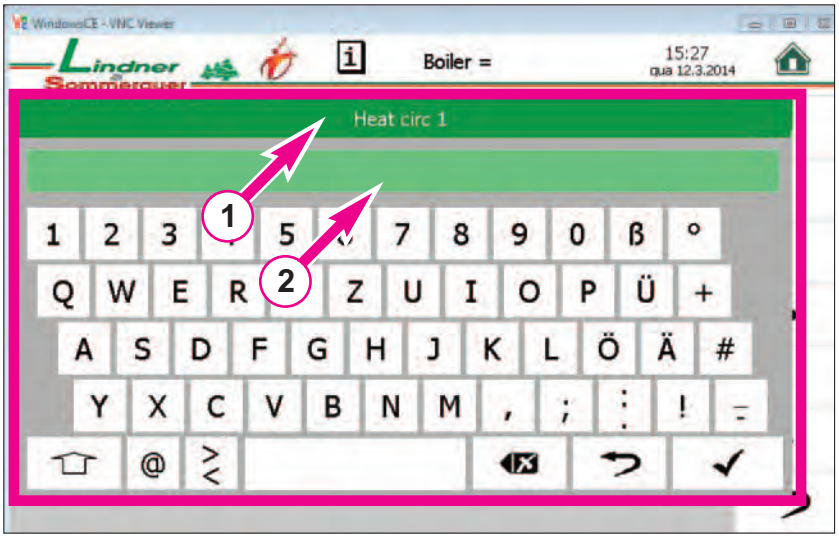


Fig. 2-160: Dialogue field – keyboard

❶ Selected parameter
❷ Current designation

Dialogue field – keyboard		
Symbol	**Designation**	**Description**
	Level back	By clicking on this symbol the window is closed without saving.
5	**Numeric keypad**	By clicking on the letters/numbers any names of your choice can be assigned (e.g. Office 1).
	Delete input	By clicking on this symbol you delete the last number entered.
	Confirm	By clicking on this symbol you save the value entered.

2.4.3 Activation Fields

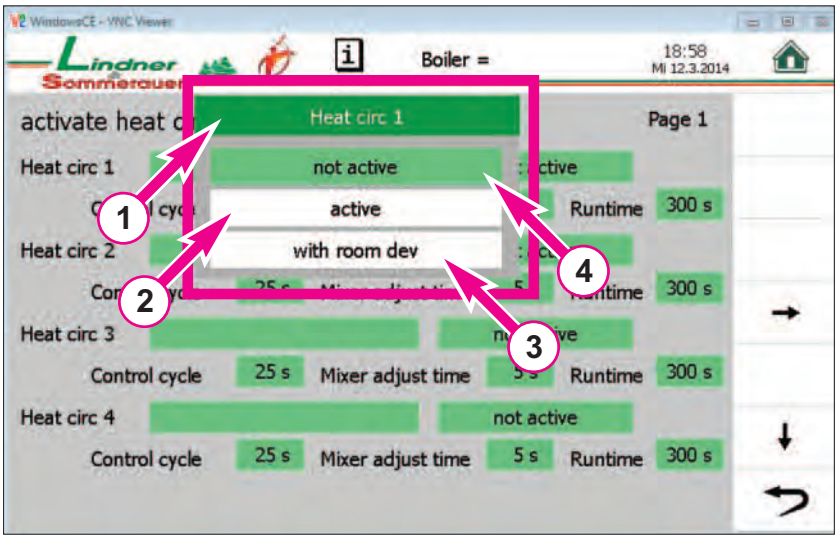


Fig. 2-170: Activation field – heating circuit

❶ Selected parameter
❷ Possible parameter
❸ Possible parameter
❹ Active parameter status (green)

By clicking on a possible parameter the status is changed and the activation field is hidden. The change is immediately displayed.

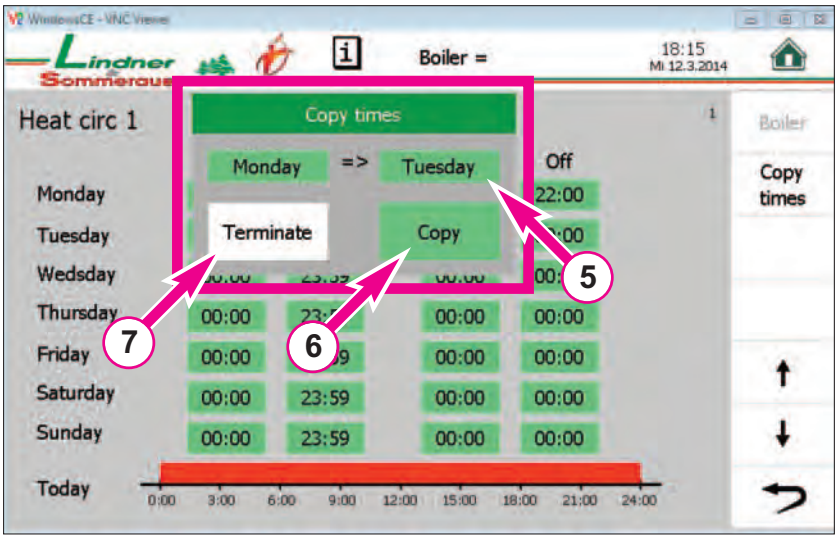


Fig. 2-180: Activation field - Copy times

❺ Acktive parameter
❻ Copy
❼ Terminate

By clicking on the active parameter Tuesday the status is immediately changed to Wednesday. The setting Monday is exported to Wednesday by clicking on the „Copy“ field.

2.5 Modes of Operation

2.5.1 Manual Operation, Storage (max. 4x)

The current mode of operation is highlighted in green. The following figure shows the multiple boiler control system in the Manual Operation mode..

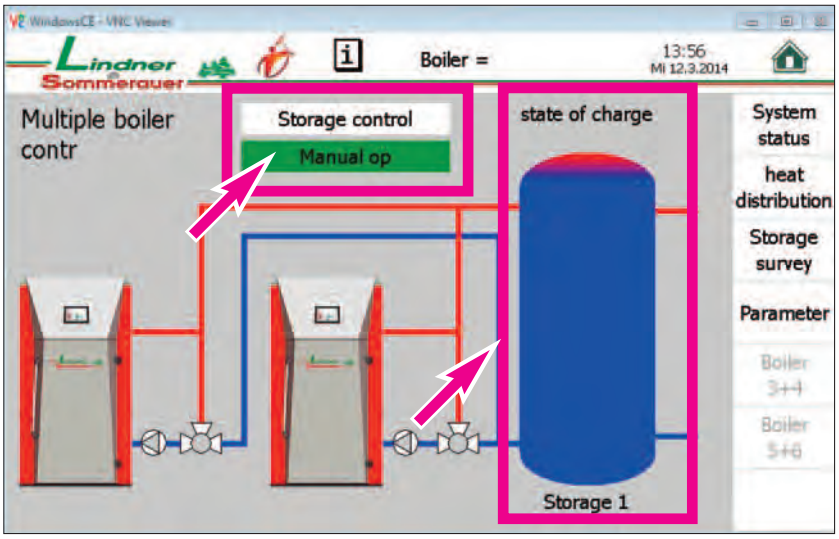


Fig. 2-190: Main menu

By clicking on the storage symbol you get to the Storage setting page.

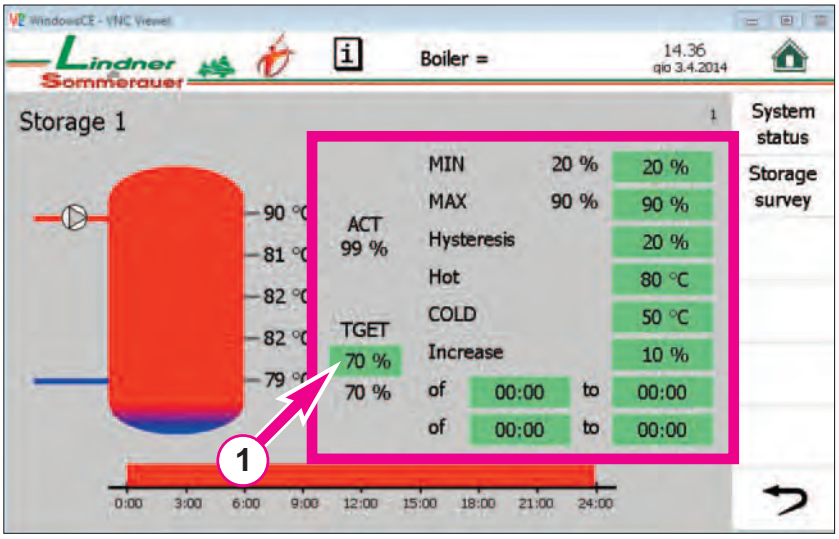


Fig. 2-200: Storage 1

Changing of Values

❶ By clicking on one of the fields with green shading a dialogue window will open with the option to change values.

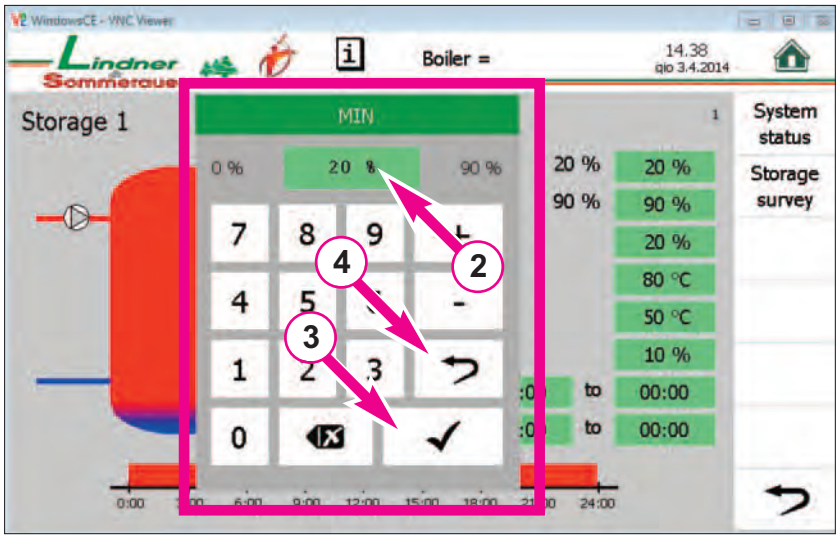


Fig. 2-210: Storage 1, click on individual value (1), enter (2), confirm (3)

❷ C hange the value using the numeric pad
❸ Save the value ...
❹ ... or leave the dialogue window without saving

Possible setting Storage 1		
Designation	**Setting option**	**Password level**
MIN	Min. 0 %, Max. 70 %	All (factory setting)
MAX	Min. 70 %, Max. 100 %	All (factory setting)
Hysteresis	Min. 0 %, Max. 80 %	All (factory setting)
HOT	Min. 50°C, Max. 100°C	All (factory setting)
COLD	Min. 0°C, Max. 80°C	All (factory setting)
Increase	Min. 0 %, Max. 100 %	All (factory setting)
TARGET	Min. 20 %, Max. 90 %	All (factory setting)

2.5.2 Manual Operation, Boiler

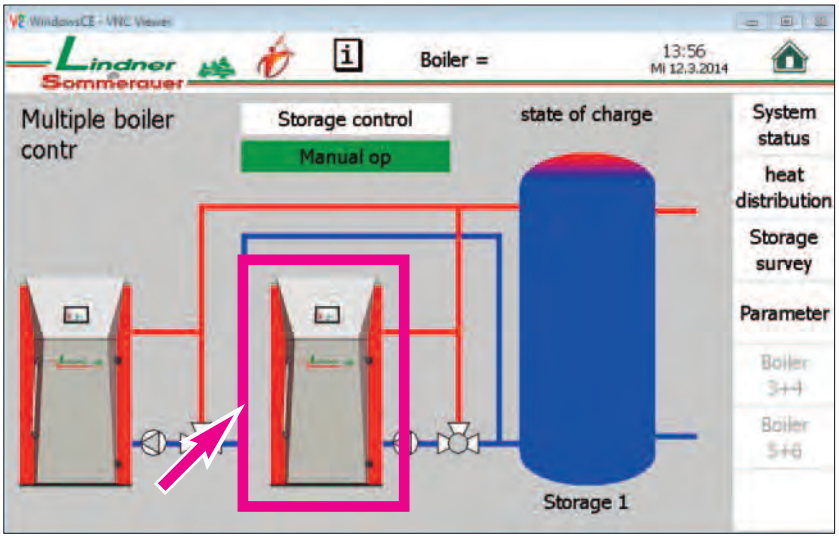


Fig. 2-220: Main menu

By clicking on the boiler symbol you open the setting page of the boilers used.

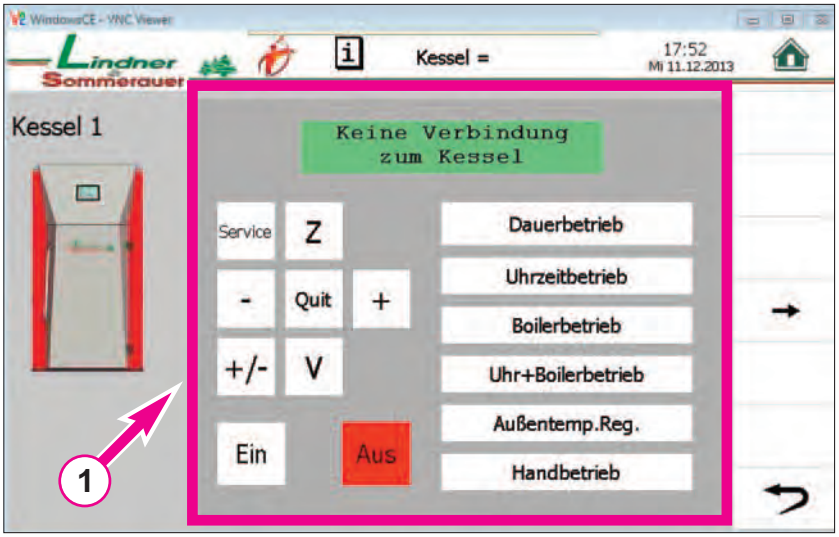


Fig. 2-230: Dialogue field boiler

For setting options see Operating Instructions of the corresponding boilers!

2.5.3 Storage Control

If the „Storage control“ mode of operation is highlighted in green, the multiple boiler system is controlled in automatic mode.

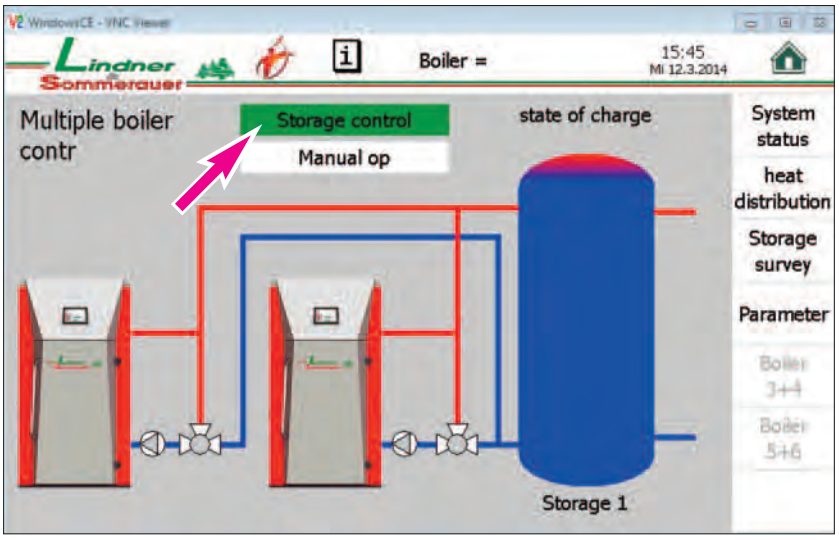


Fig. 2-240:Storage Control „activated“

3

Manual Operation

3.1 Change to Manual Operation

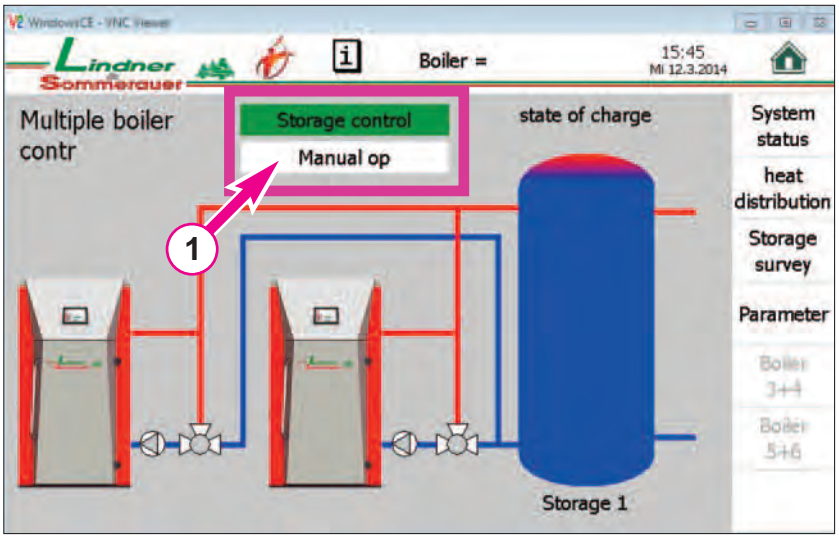


Fig. 3-010: Storage Control „activated“

❶ Click on the „Manual Op“ text field

Fig. 3-020: Manual operation

❷ Click on the „Activate“ text field. The function gets selected immediately („Activate“ will change to „Active“)

❸ By clicking „Level back“ you get back th the main menu

3.2 Manual Operation

3.2.1 Manual Operation, Boiler 1-6

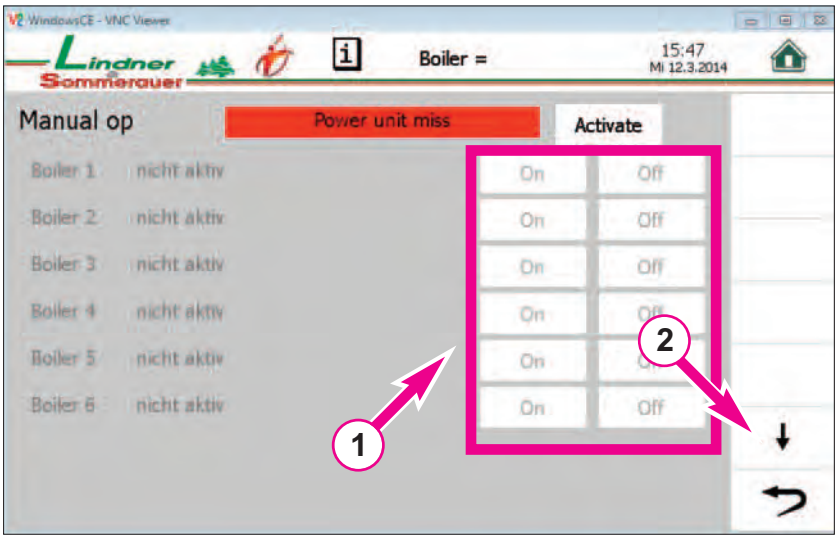


Fig. 3-030: Manual operation, boiler 1-6

❶ Here available boilers can be switched on (On = heating) or off (Off)

HINWEIS!

In System Status you can see which boiler is currently switched on.

❷ By clicking on the „Arrow“ you get to the next Manual Op page

3.2.2 Manual Operation, heating circuit Pump/heating circuit Mixer 1-16

Here mixers and pumps can be tested, i.e. direction of the mixer adjustment (Open/Close).

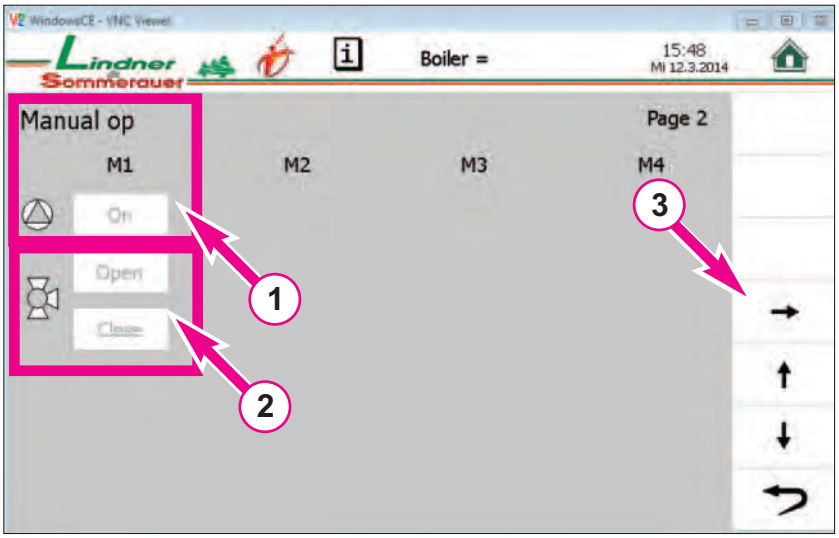


Fig. 3-040: Manual operation, heating circuit pump/heating circuit mixer 1-4

❶ Dialogue field heating circuit pump On/Off
❷ Dialogue field heating circuit mixer On/Off
❸ Gets you to further sub-pages (M5-M16)

NOTE!

See also Main Menu > Heat Distribution > heating circuit

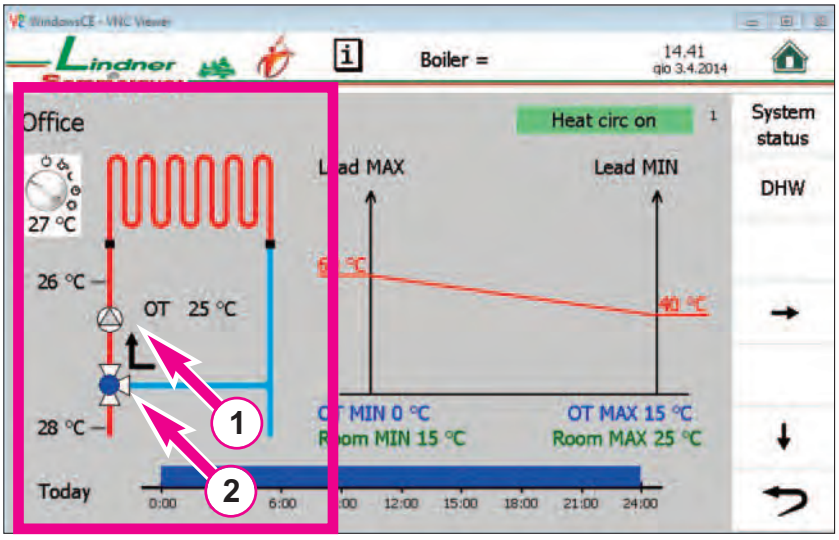
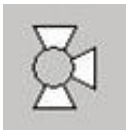


Fig. 3-050: Heating circuit

The current operating states are indicated at the symbols:

Operating states heating pump/heating mixer		
Symbol	**Designation**	**Description**
	Heating pump OFF	Operating status OFF: Pump is not running.
	Heating pump ON	Operating status ON: Pump is running.
	**Heating circuit mixer OFF**	The heating circuit mixer is not active.
	Heating circuit mixer + warm water	More hot water is taken from the feed flow pipe to reach the required temperature.
	Heating circuit mixer + cold water	More cold water is taken from the return flow pipe to reach the required temperature.
	Fire symbol	Indicates that the heating circuit requires energy.

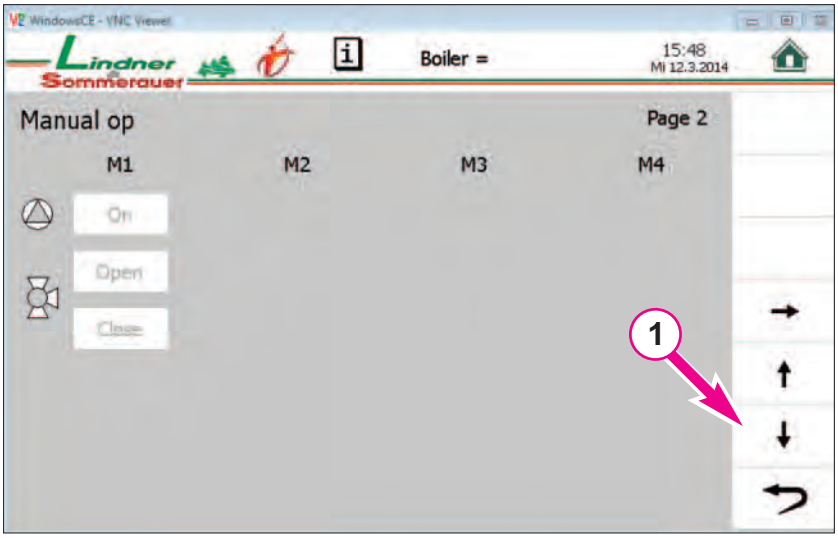


Fig. 3-060: Manual operation, heating circuit pump/heating circuit mixer 1-4

❶ By clicking on the „Arrow“ you get to the next Manual Op. page

3.2.3 Manual Operation, Transfer 1-4, Network Mixer 1-4

Fig. 3-070: Manual operation transfer 1-4

Fig. 3-080: Manual operation network mixer 1-4

3.2.4 Manual Operation, Storage 1-4

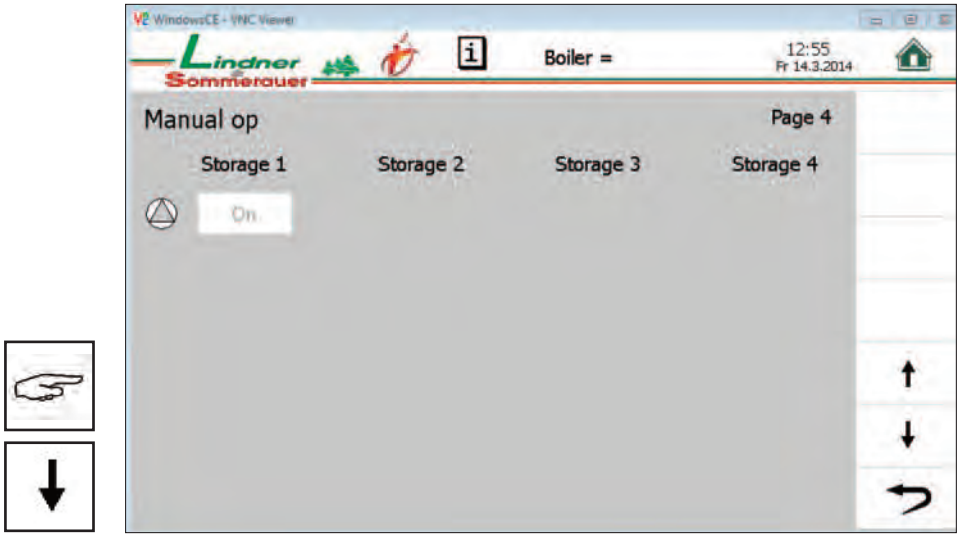


Fig. 3-090: Manual operation storage 1-4

3.2.5 Manual Operation, Ash Motor 1-8

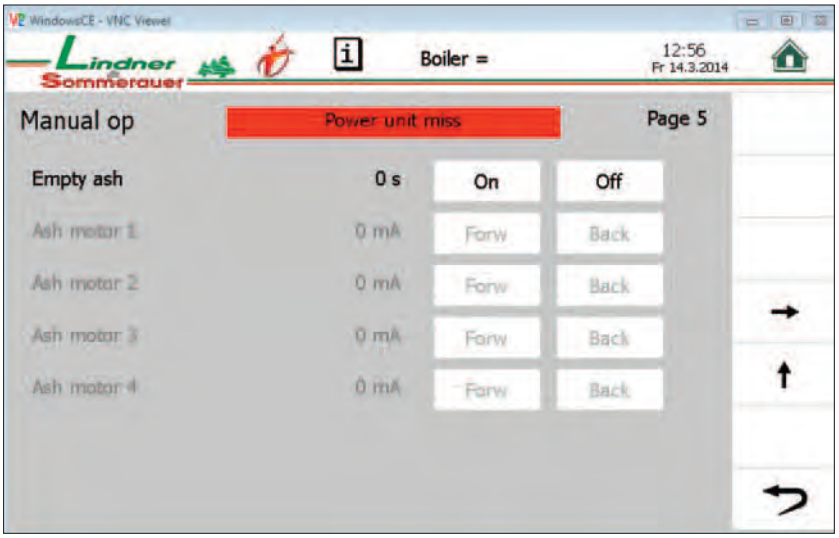


Fig. 3-100: Manual operation ash motor 1-4

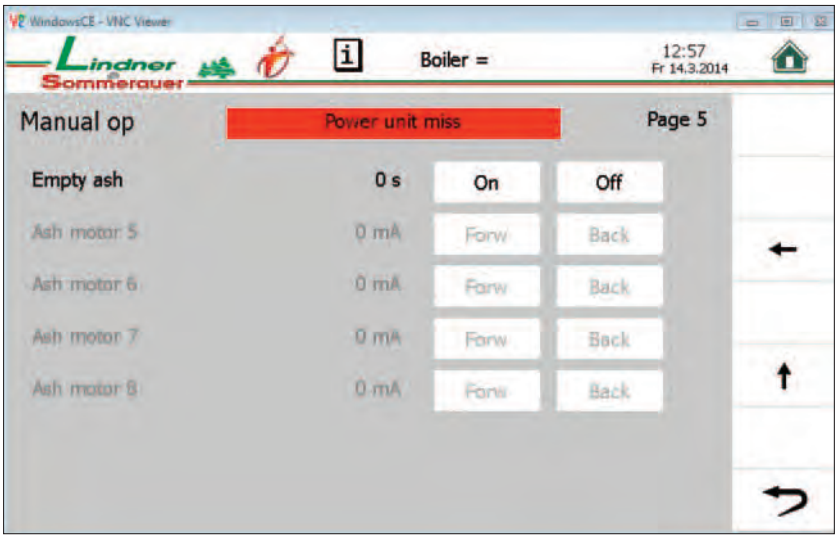


Fig. 3-110: Manual operation ash motor 5-8

4

Storage Control

4.0 Storage Control

4.1 Setting Page of the Storage Control

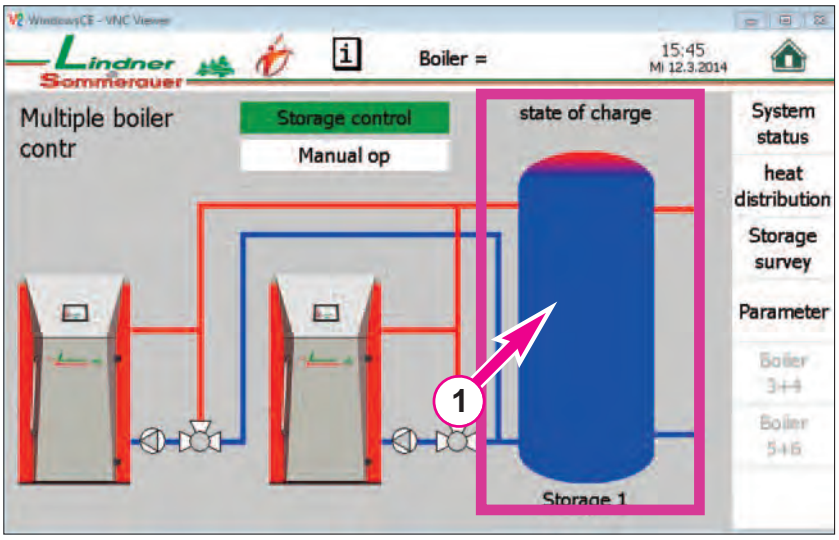


Fig. 4-010: Main menu

❶ Click on the „Storage“ graphic field

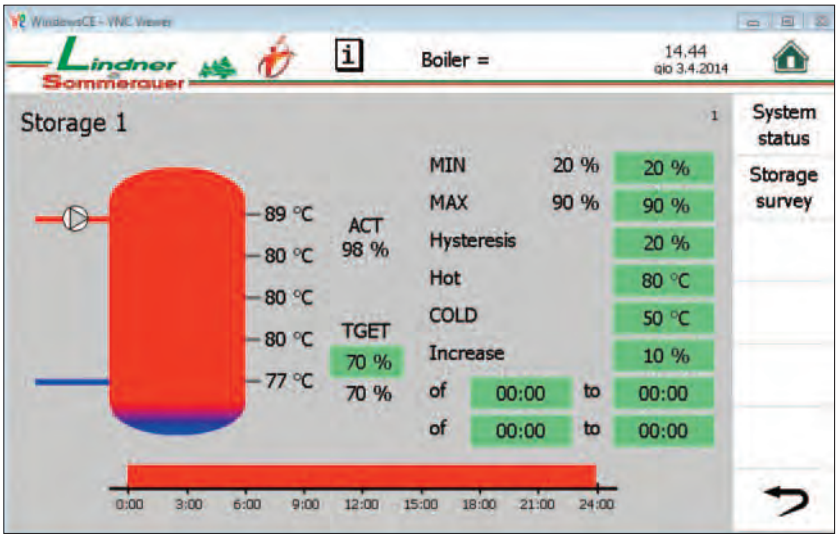


Fig. 4-020: Storage 1

4.1.1 Setting Options

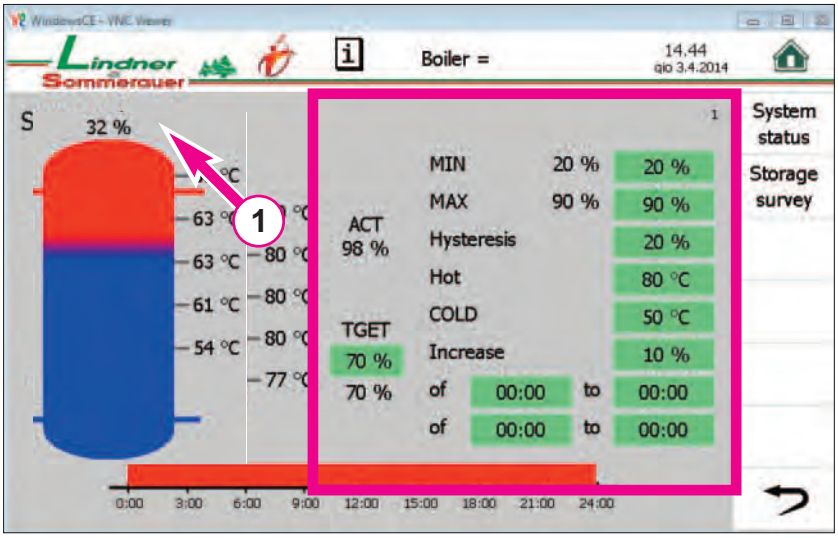


Fig. 4-030: Storage 1

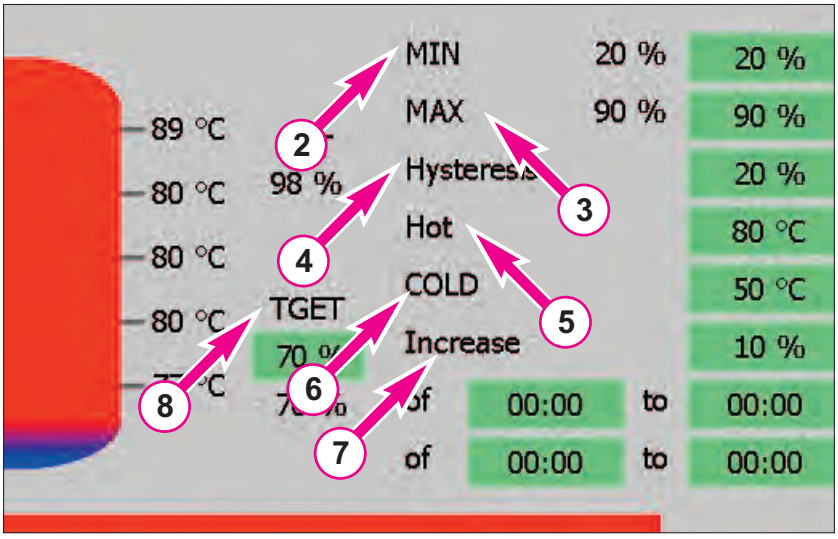


Fig. 4-030: Storage 1

Storage Settings	
Bezeichnung	**Erläuterung**
❶ State of Charge	Indication of the current state of charge. Depending on the temperature, the number of sensors and the definition of storage HOT and storage COLD, the state of charge is determined automatically.
❷ Storage MIN	Definable MIN state of storage charge at which the boilers will switch on.
❸ Storage MAX	Definable MAX state of storage charge at which the boilers will switch off.
❹ Hysteresis	If several boilers are available and the storage hysteresis is set on value zero, all storages are charged up automatically when more energy is demanded. If the hysteresis for one storage is set on e.g. 10%, this storage will only be co-charged if the hysteresis value has dropped below that target. Storage charge = Storage TARGET minus hysteresis.
❺ HOT	For calculating the state of storage charge a maximum temperature must be pre-selected.
❻ COLD	For calculating the state of storage charge a minimum temperature must be pre-selected.
❼ Increase	All the pre-defined states of charge are increased (MIN, Target, MAX). This increase can occur during 2 time slots per day. In order to deactivate the increase, the switch-on and switch-off times have to be set on the same value.
❽ Storage TARGET	Definable storage TARGET state of charge in percent. Up to reaching this target value the boilers of the multiple storage control system will run at full power. After reaching the storage TARGET the power gets modulated in the direction storage MAX.

4.1.2 Storage Sensors

The state of charge of a storage can be registered through storage sensors which are distributed evenly over the storage. 3-7 sensors are possible for each storage.

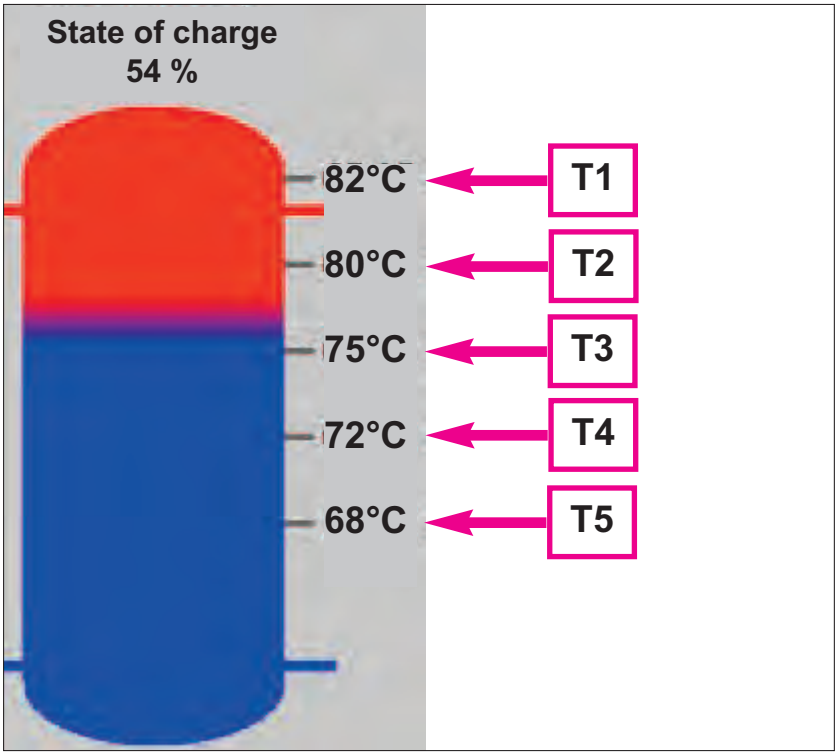


Fig. 4-050: Storage with 5 storage sensors

With 5 storage sensors available the maximum assessment degree for each sensor amounts to 20% (100% : 5 = 20%).

	Assessment Degree / Sensor				
	3 Sensor	4 Sensor	5 Sensor	6 Sensor	7 Sensor
T1	33,3 %	25 %	20 %	16,6 %	14,3 %
T2	33,3 %	25 %	20 %	16,6 %	14,3 %
T3	33,3 %	25 %	20 %	16,6 %	14,3 %
T4		25 %	20 %	16,6 %	14,3 %
T5			20 %	16,6 %	14,3 %
T6				16,6 %	14,3 %
T7					14,3 %
	100 %	100 %	100 %	100 %	100 %

Fig.: Assessment degree per available storage sensor

4.1.3 State of charge

The state of charge is determined through the temperature setting (HOT/COLD) and the available storage sensors (3-7).

The following example illustrates the determination of the state of charge ❶ using 5 storage sensors ❷ and the HOT = 80°C ❸ and COLD = 70°C ❹ settings.

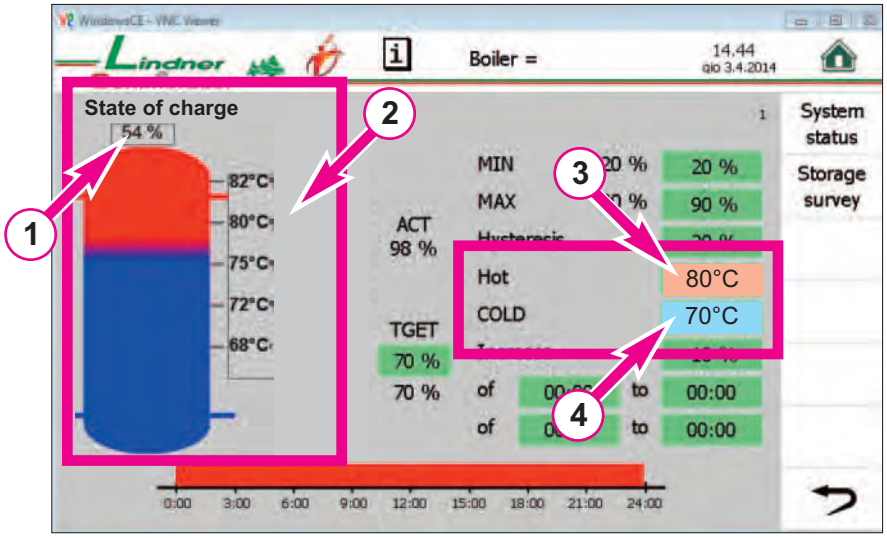


Fig. 4-060: Storage 1

	Assessment degree / Sensor				
	3 Sensor	4 Sensor	5 Sensor	6 Sensor	7 Sensor
T1	33,3 %	25 %	20 %	16,6 %	14,3 %
T2	33,3 %	25 %	20 %	16,6 %	14,3 %
T3	33,3 %	25 %	20 %	16,6 %	14,3 %
T4		25 %	20 %	16,6 %	14,3 %
T5			20 %	16,6 %	14,3 %
T6				16,6 %	14,3 %
T7					14,3 %
	100 %	100 %	100 %	100 %	100 %

Fig.: Assessment degree per available storage sensor

Example-setting: ❶ HOT = 80°C, ❷ COLD 70°C + measured actual temperature values ❸ at the storage sensors T1-T5.
❹ **Result: State of charge = 54%**

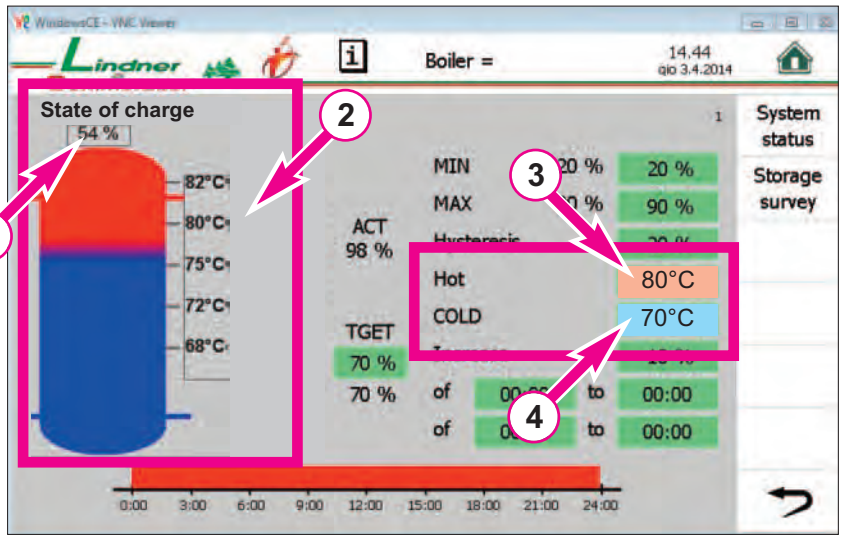


Fig. 4-070: Storage 1

Limit value	Storage sensor		Assessment State of charge	Individual state of charge
	Nr.	°C	%	%
HOT ≥ 80°C	T1	82° C	20 %	20 %
		81° C	20 %	
	T2	80° C	20 %	20 %
Intermediate temperature values are calculated by linear interpolation (between 0-20%)		79° C	18 %	
		78° C	16 %	
		77° C	14 %	
		76° C	12 %	
	T3	75° C	10 %	10 %
		74° C	8 %	
		73° C	6 %	
	T4	72° C	4 %	4 %
		71° C	2 %	
COLD ≤ 70°C		70° C	0 %	
		69° C	0 %	
	T5	68° C	0 %	0 %
Total state of charge				54 %

4.2 Activate Storage

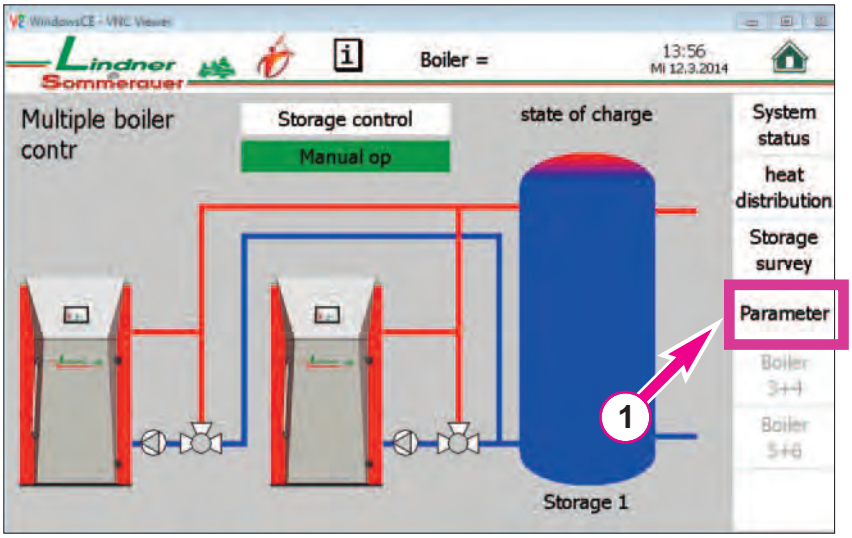


Fig. 4-080: Main menu

❶ Click on the „Parameter“ text field

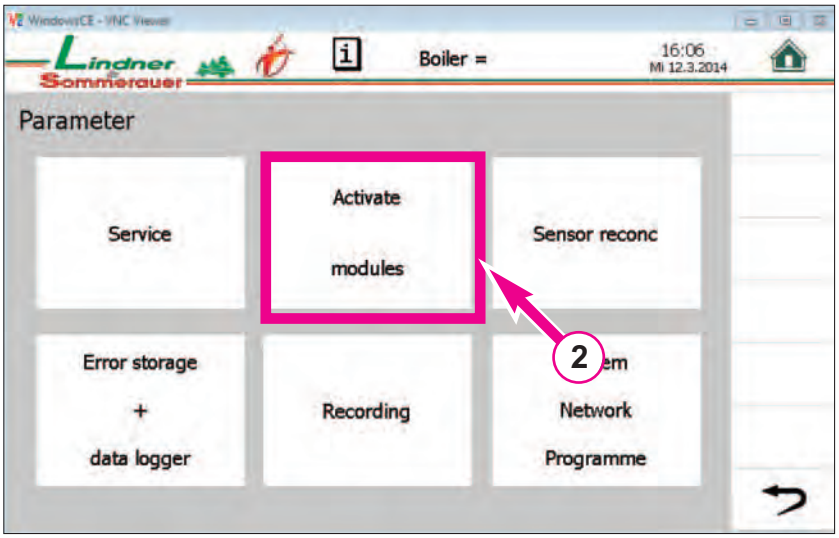


Fig. 4-090: Storage 1

❷ Click on the „Activate modules“ text field

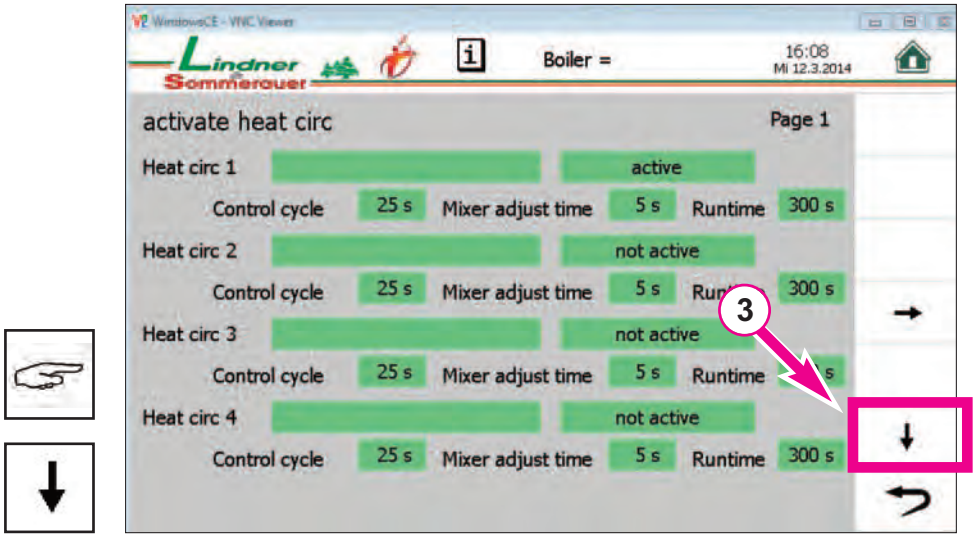


Fig. 4-100: Monitor page „Activate heating circuit“

❸ Click 2x on the downward arrow symbol to reach the monitor page „Activate storage“

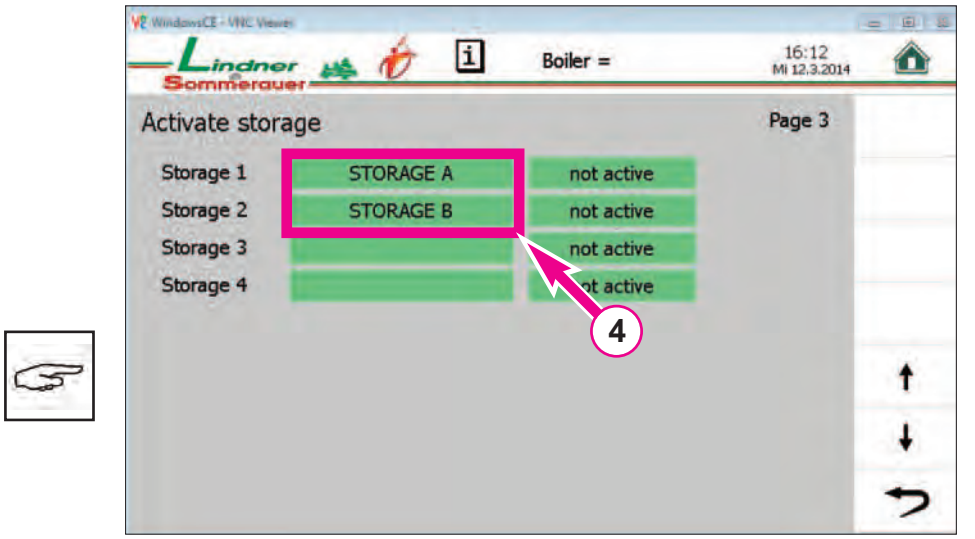


Fig. 4-110: Monitor page „Activate storage“

❹ Name the available storages by clicking on a green field

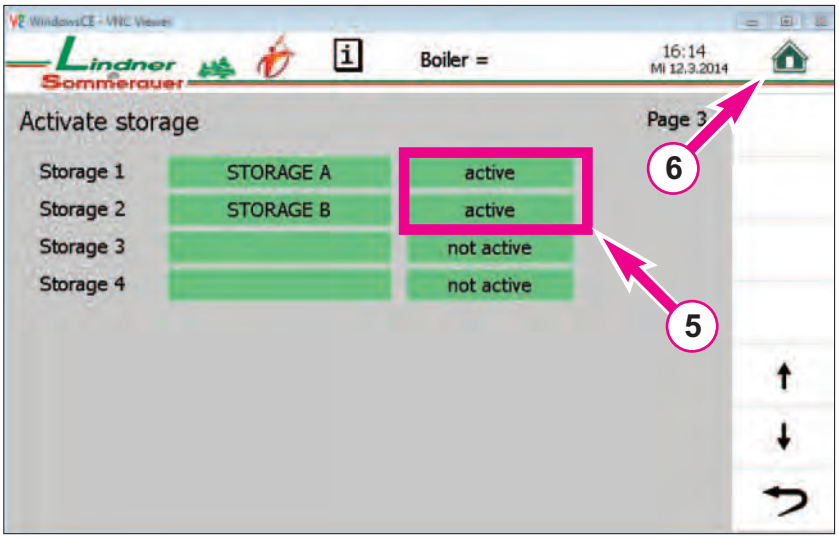


Fig. 4-120: Monitor page „Activate storage“

❺ Activate the available storages

❻ Go back to the main menu

4.3 Service Page

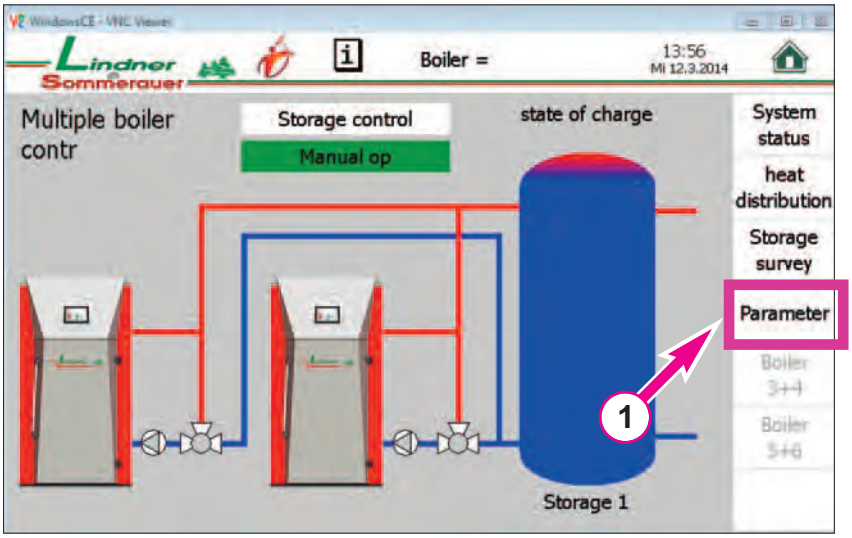


Fig. 4-130: Main menu

❶ Click on the „Parameter“ text field

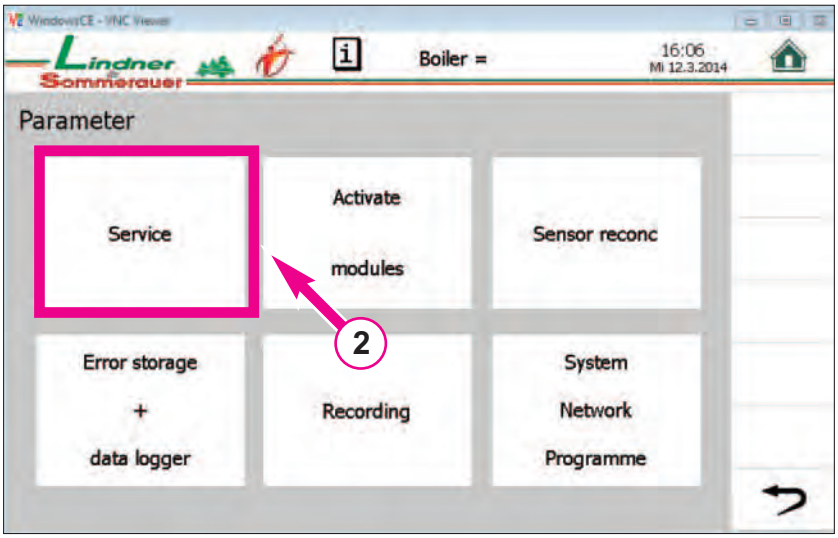


Fig. 4-140: Storage 1

❷ Click on the „Service“ text field

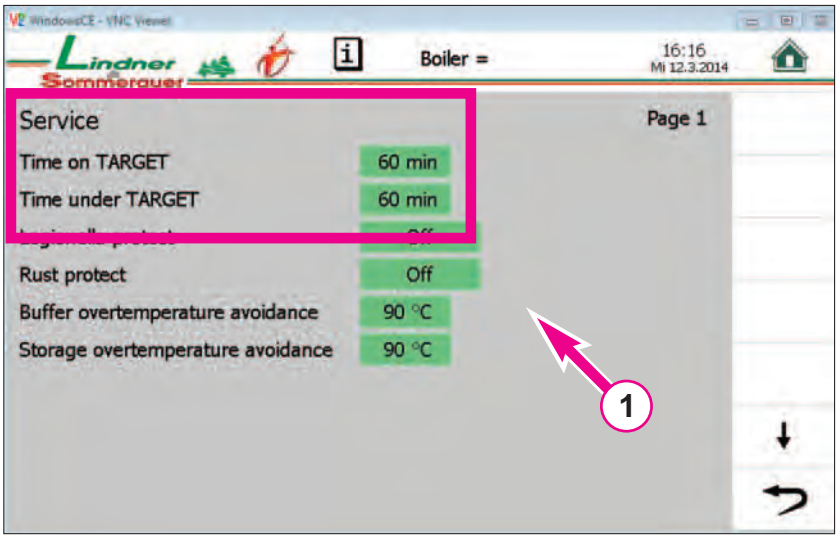


Fig. 4-150: Service, 1) Select setting

Parameter, Service	
Designation	**Erläuterung**
Time on TARGET	After this definable period the first boiler (of 6 possible ones) will switch off. When this definable period has passed a second time, the next one will switch off, and so on until only 1 boiler is left running.
Time under TARGET	After this definable period the first boiler will switch on. When this definable period has passed a second time, the next one will switch on, and so on until all boilers are switched on.

4.4 Activate Storage Control

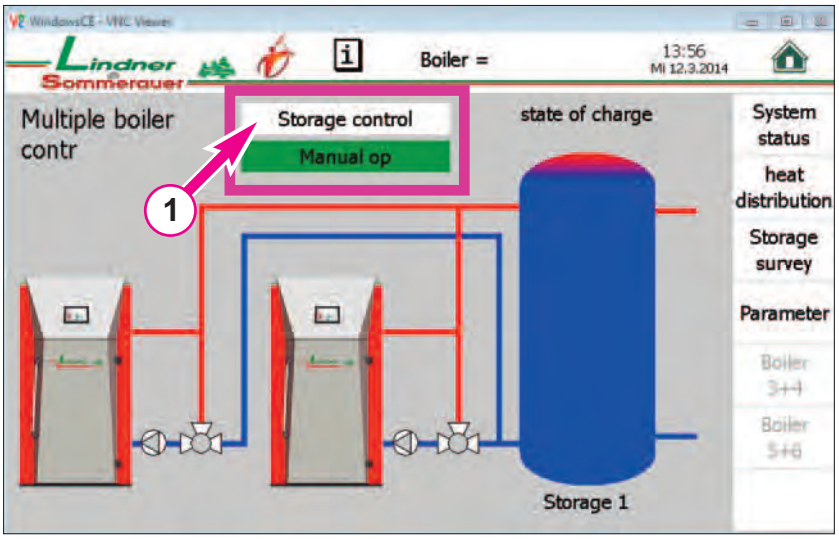


Fig. 4-160: Manual Operation „activated“

❶ Click on the „Storage control“ text field

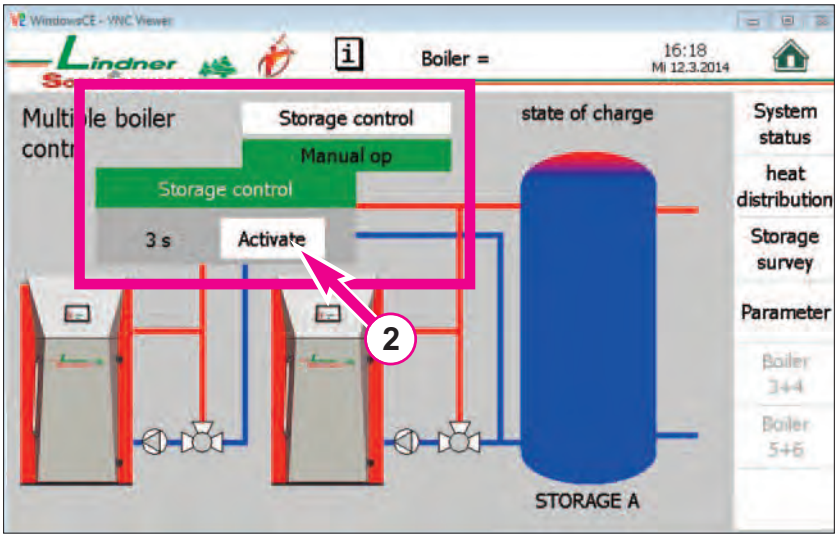


Fig. 4-170: Dialogue field storage control

❷ Click on the „Activate“ text field. The function gets selected immediately („Activate“ will change to „Active“)

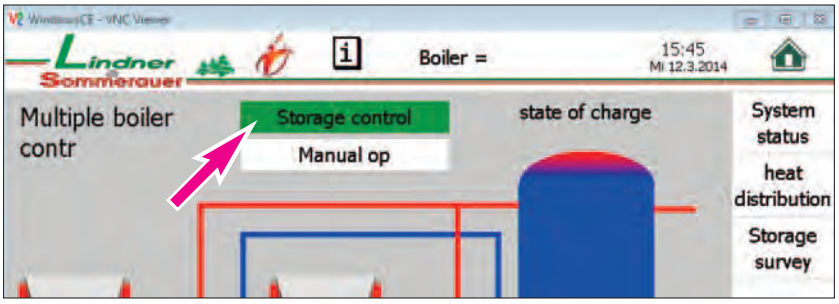


Fig. 4-180: Storage control „activated“

5

System Status

5.0 System Status

In the system status all variables involved in the control processes are displayed.

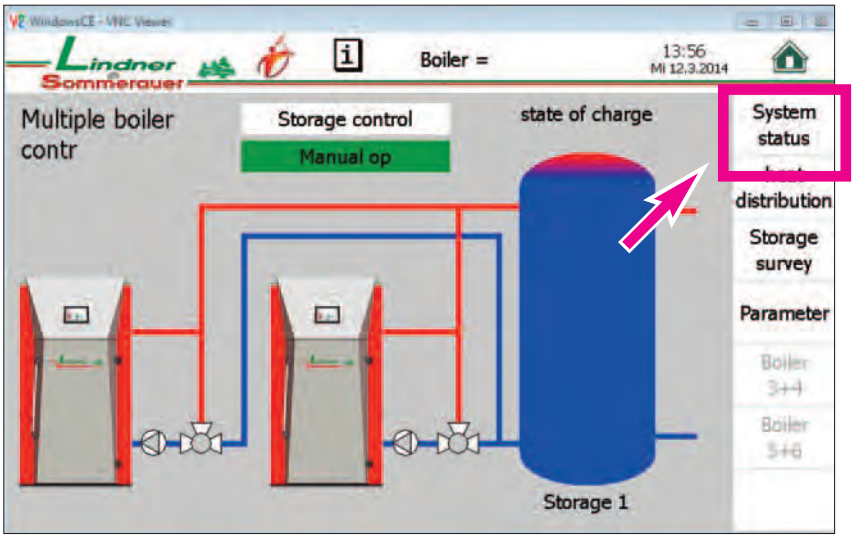


Fig. 5-010: Main menu

Dazu zählen:

❶ Boilers 1-6
❷ Heating circuit mixers M1 to M16
❸ DHW tanks B1 to B24
❹ Transfer mixers and network mixers 1 to 4
❺ Storages 1-4

5.1 Boiler 1-6

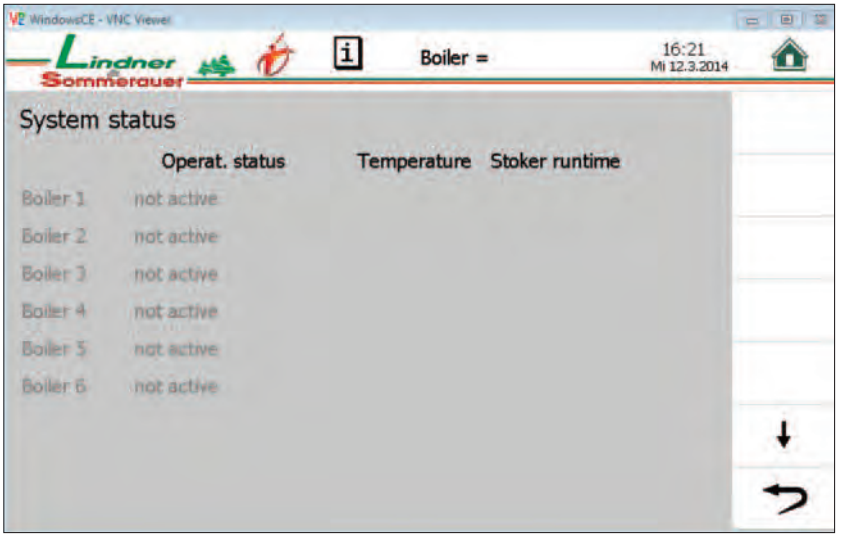


Fig. 5-020: System status, boilers 1-6

5.2 Heating circuits 1-16 + DHW Tanks 1-24

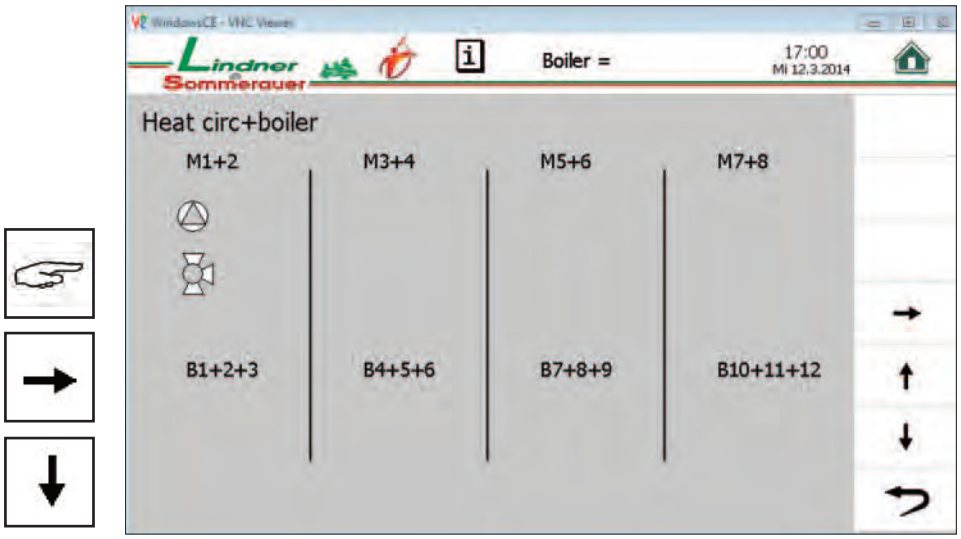


Fig. 5-030: System status, heating circuits 1-16 + DHW tanks 1-24

5.3 Transfer mixers 1-4, network mixers 1-4

Fig. 5-040: System status, transfer mixers1-4 - network mixers 1-4

5.4 Storages 1-4

Fig. 5-060: System status, storages 1-4

6

Heat Distribution heating circuit

6.0 Heat Distribution heating circuit

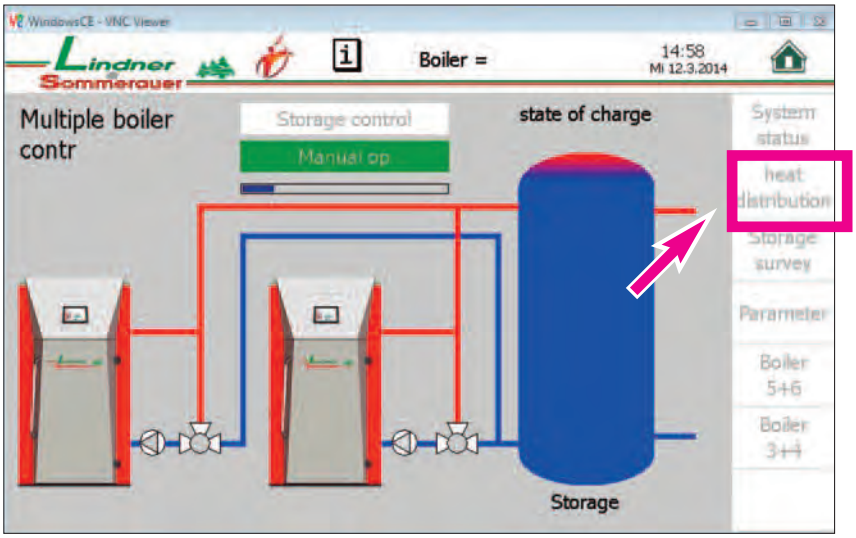


Fig. 6-010: Main menu

Fig. 6-020:Heat distribution overview

6.1 Heating circuit

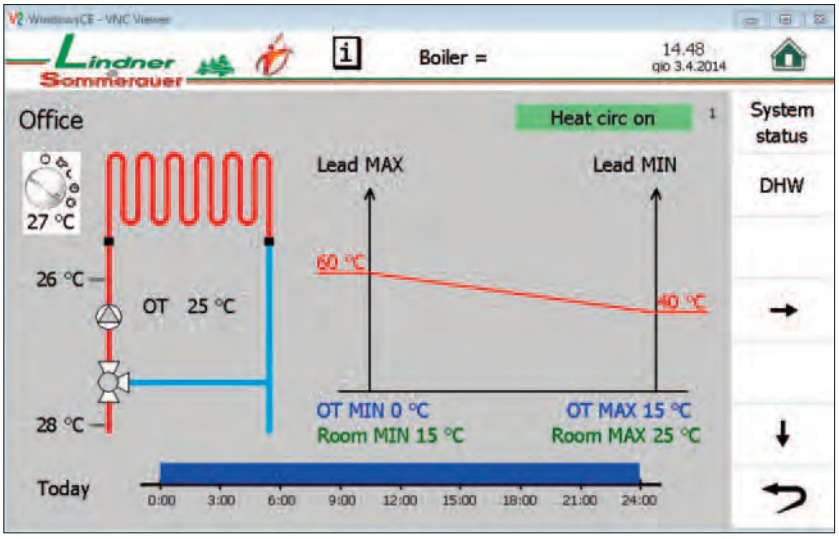


Fig. 6-030:Heat distribution, heating circuit 1-16

Up to 16 heating circuits can be managed and operated independently of each other.
In the diagram the current temperature curve is displayed, which means:
With the defined outdoor temperature of 0°C or less the heat distribution will run with a maximum feed flow temperature of 60°C.If the outdoor temperature rises to a defined value of 15°C or above, the heat distribution will run with the minimum feed flow temperature of 40°C.
The calculated feed flow temperature is made up of the following factors:

1) Outdoor temperature (optional, if an outdoor temperature sensor is installed)
2) Room temperature (optional, if a room device is installed)
3) Parameter room influence

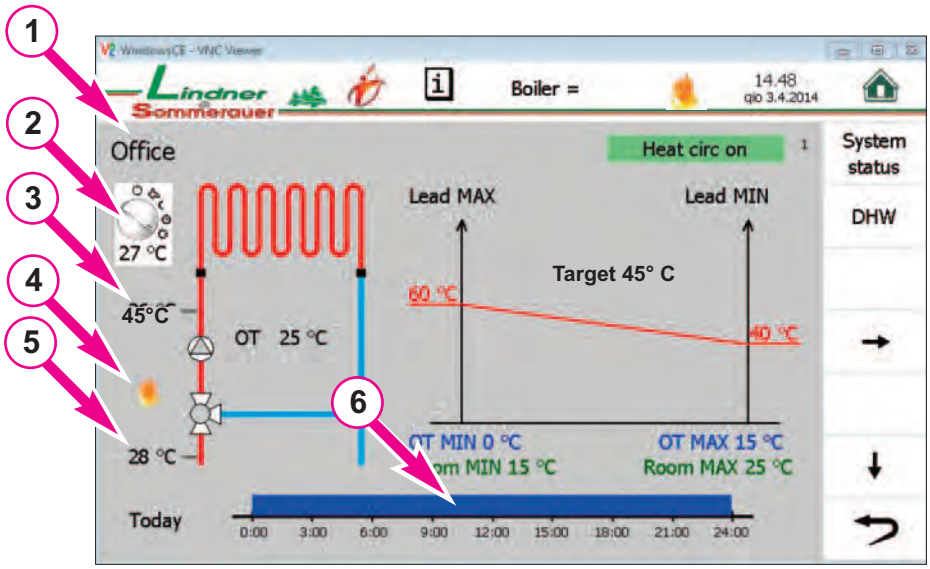


Fig. 6-040:Heat distribution, heating circuit

❶ The heating circuit can be named individually (see „Parameter“ → „Activate modules“).
❷ At the room device the room temperature and the switch position (optional) are displayed, if installed.
❸ Here and now the feed flow has a temperature of 45°C.
❹ At this moment energy is demanded by the heating circuit.
❺ Display of the current source temperature.
❻ In the bottom diagram the heating circuit settings of the present day can be seen.

red → calculated feed flow temperature according to setting
blue →calculated feed flow temperature minus feed flow reduction

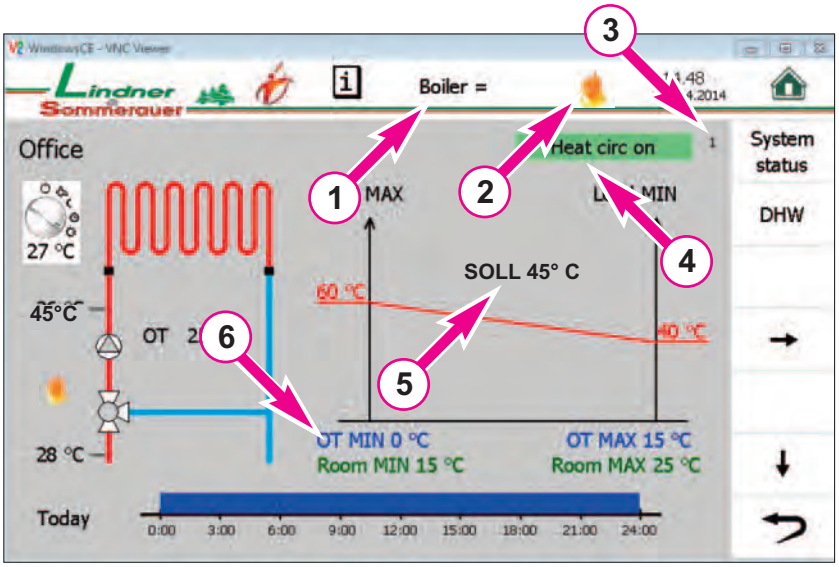


Fig. 6-050:Heat distribution, heating circuit

❶ Display of the current boiler temperature.
❷ Symbol showing that the boiler is producing energy.
❸ Display of the heating circuit number
❹ The heating circuit is switched on, by clicking on the green button area a window will open. Here the heating circuit can be switched off manually. In the case of „Heating circuit Off“ this heating circuit is no longer taken into account by the control system until it is switched manually to „Heating circuit On“ again.
❺ The control system uses the outdoor and the room temperature to calculate the feed flow temperature
❻ Using the values for the minimum and maximum outdoor temperature and the values for the minimum and maximum room temperature the required feed flow temperature is calculated.

6.2 Room Device

The heating circuit is exclusively operated by means of the operation mode switch at the room device. Depending on the position of the operation mode switch the functions vary.

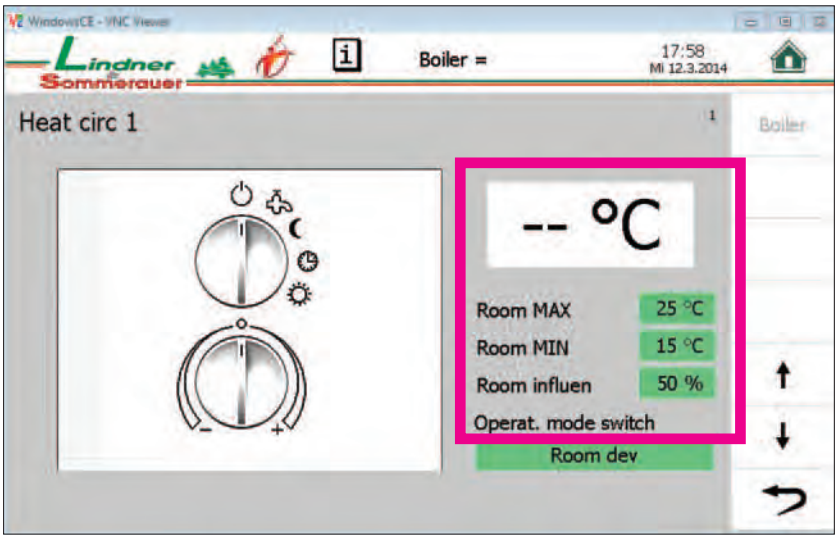


Fig. 6-060: Heat distribution, room device

❶ Display of the room temperature
❷ Room MAX: This parameter is necessary for calculating the required room temperature
❸ Room MIN: This parameter is necessary for calculating the required room temperature
❹ Room influence: This parameter serves for defining the extent to which the room temperature is integrated into the calculation of the feed flow temperature
0% = the room temperature is not taken into account
100% = the feed flow temperature is determined solely by the room temperature.

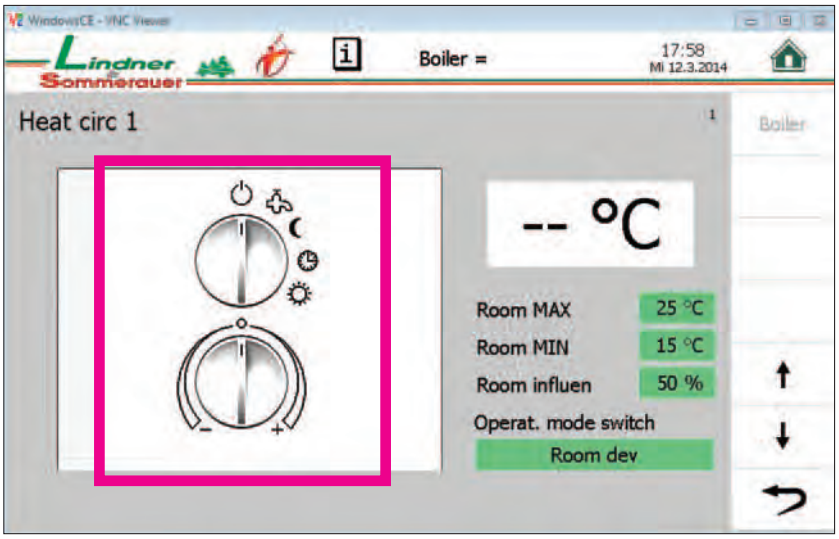


Fig. 6-070: Heat distribution, room device

6.2.1 Modes of Operation

Operation mode switch - Room device		
Symbol	**Designation**	**Description**
	Heating circuit Off	The heating circuit is switched off. If the operation mode switch is set in this position, no hot water is provided either (DHW tank operation).
	Heating circuit Off, DHW tank charge	The heating circuit is switched off, solely the DHW tank is being charged.
	Reduced heating mode	The heating control lowers the calculated value by the value of the feed flow reduction.
	Time-controlled heating mode	The heating and reduction is operated time-controlled.
	Permanent heating mode	The heating is operated permanently, the feed flow temperature is not reduced.

6.2.2 Changing of Values

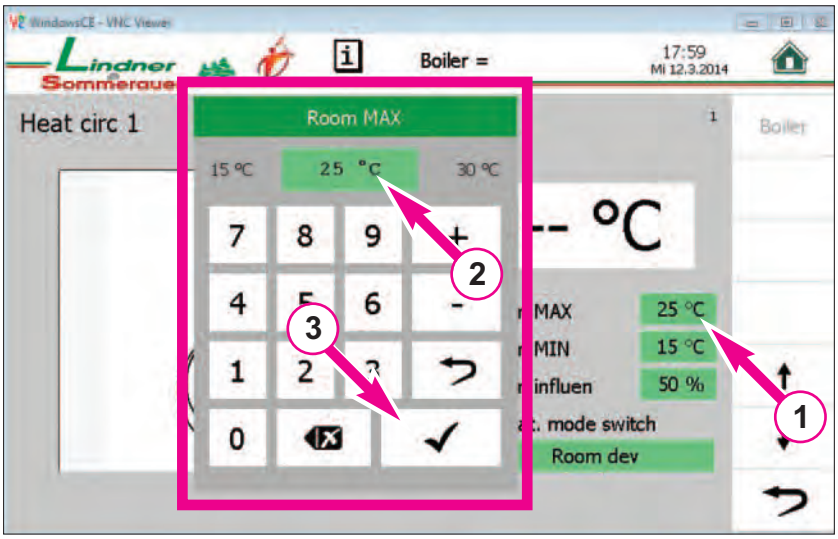


Fig. 6-080: Click on value (1), enter (2), confirm (3)

6.2.3 Setting Options

Setting options – Room device		
Designation	**Setting option**	**Password level**
Room MAX	Min. 15°C, Max. 30°C	All (factory setting)
Room MIN	Min. 0°C, Max. 25°C	All (factory setting)
Room influence	Min. 0°C, Max. 100°C	All (factory setting)
Room device	Op. dev., Room dev.	All (factory setting)

6.2.4 Change from Room Device to Operating Device

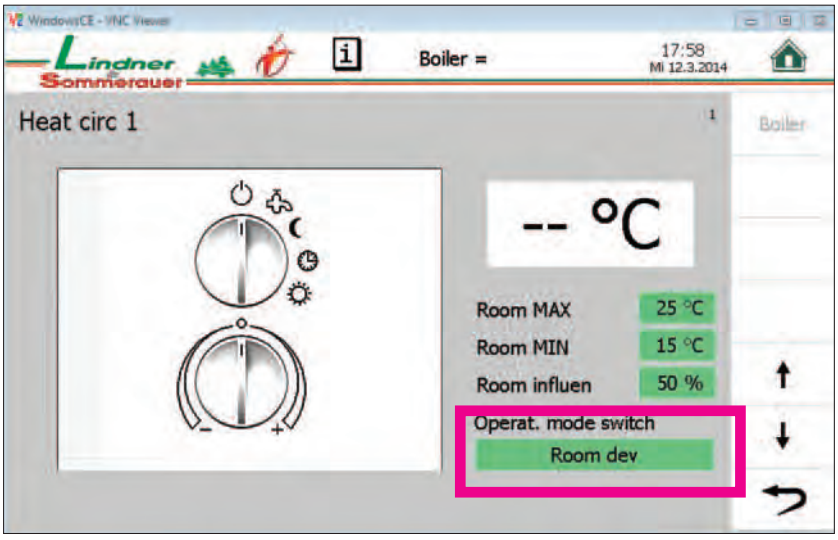


Fig. 6-090: Heat distribution, room device

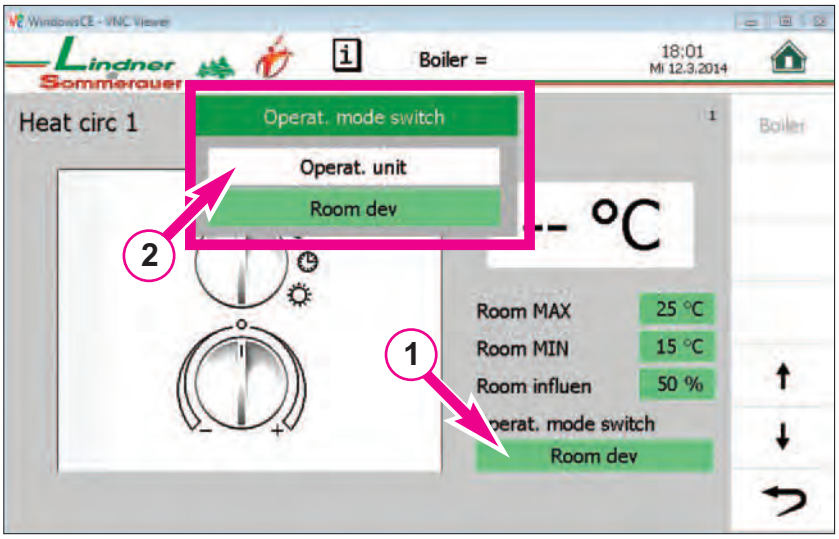


Fig. 6-100: 1) Click on „Room device“. 2) Select „Operating device“

6.3 Operating Device

The available room device is no longer taken into account, at the operating device the same modes of operation can be selected as at the room device..

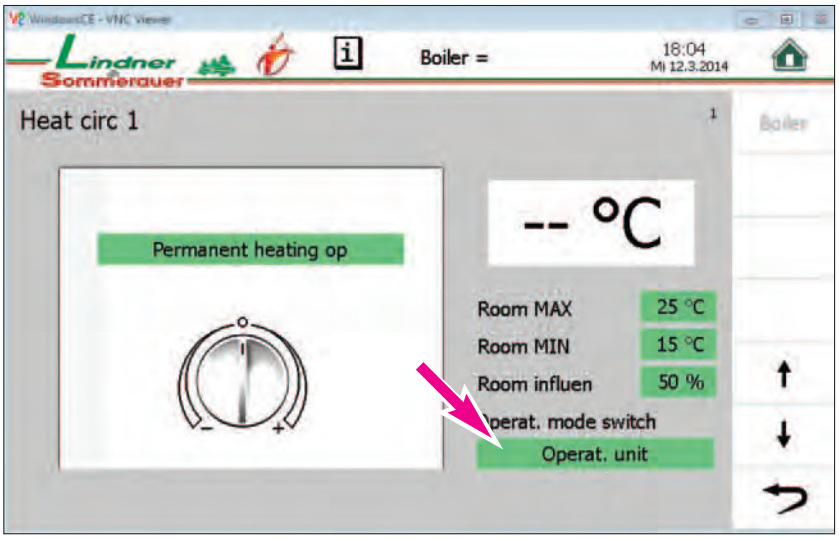


Fig. 6-110: Heat distribution, operating device „active“

If „Operation by operating device“ is selected, the room device graphic will no longer show the dial of the mode of operation selector. Instead, a green field is displayed offering the same setting options as with the mode of operation selector. By clicking on this field the desired setting can be selected.

6.4 Heating Circuit, Feed Flow/Outdoor Temperature

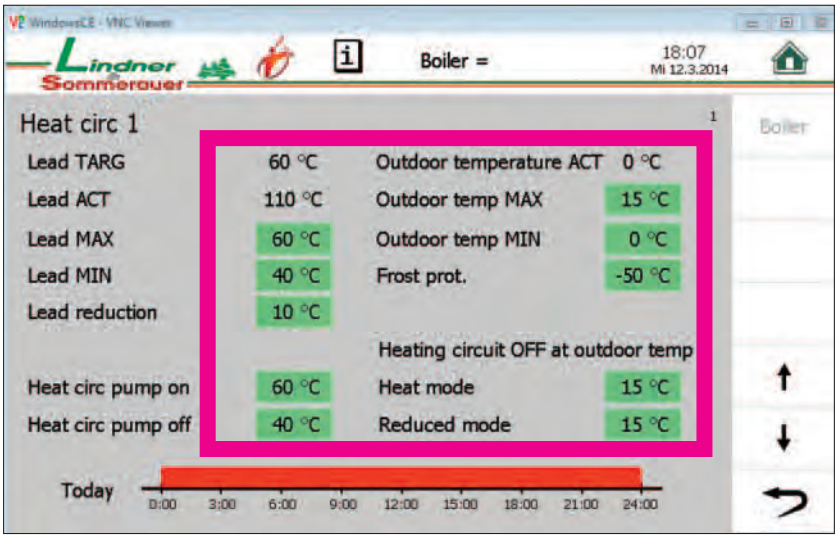


Fig. 6-120: Heat distribution, heating circuit 1

Heating circuit feed flow/Outdoor temperature	
Designation	**Explanation**
Feed TARGET	Depending on the maximum and minimum feed flow temperature, the maximum and minimum outdoor temperature and the maximum and minimum room temperature the feed flow target temperature is calculated.
Feed ACTUAL	Actual feed flow temperature.
Feed MAX	Here the highest feed flow temperature is specified for the control system.
Feed MIN	Here the lowest feed flow temperature is specified for the control system.
Feed reduction	If the control system is outside of the heating times the feed flow target temperature is reduced by the value of the feed flow reduction.
Heating circuit pump ON	If the temperature reaches resp. exceeds the indicated value the heating circuit pump will switch on.
Heating circuit pump OFF	If the temperature reaches resp. falls below the indicated value the heating circuit pump will switch off.
Outdoor temperature ACTUAL	Display of the actual outdoor temperature.

Heating Circuit Feed Flow/Outdoor Temperature	
Designation	**Explanation**
Outdoor temperature MAX	For calculating the feed flow target temperature the control system requires a maximum outdoor temperature.
Outdoor temperature MIN	For calculating the feed flow target temperature the control system requires a minimum outdoor temperature.
Frost protection	If the temperature falls below the value as defined in the control system all the heating circuit and DHW tank pumps start running in order to prevent possible frost damage.
Heating circuit Off at outdoor temperature	
Heating mode	If the defined temperature is reached or exceeded the heating circuit pump will switch off, the heating operation is interrupted until the temperature falls below the indicated value.
Reduced mode	During the period when heating is performed with reduced feed flow target temperature, a temperature can be defined analogously to the heating mode.
Today	The red resp. blue bar depicts in graphic form when heating resp. a reduced heating operation was performed on the particular day.

6.4.1 Changing of Values

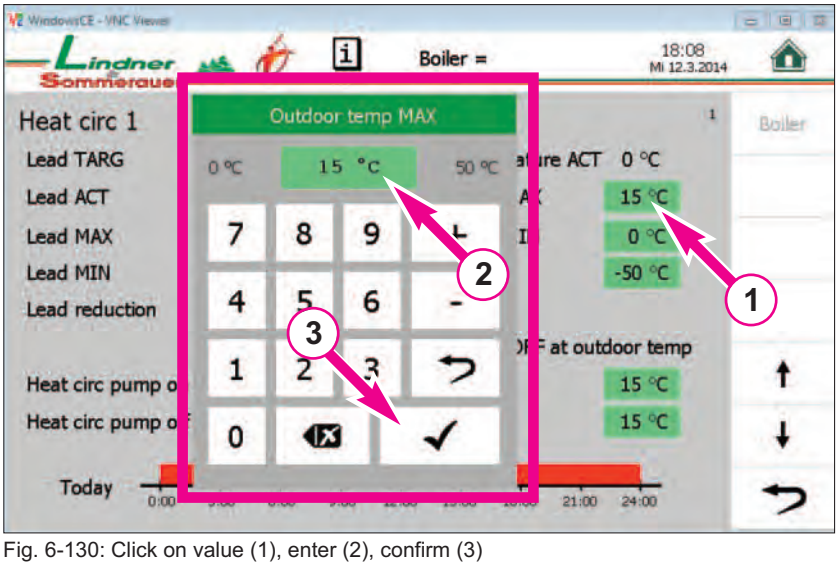


Fig. 6-130: Click on value (1), enter (2), confirm (3)

6.4.2 Setting Options

Setting options - Heating circuit 1		
Designation	**Setting option**	**Password level**
Feed flow MAX	Min. 15°C, Max. 30°C	All (factory setting)
Feed flow MIN	Min. 0°C, Max. 25°C	All (factory setting)
Feed flow reduction	Min. 0°C, Max. 100°C	All (factory setting)
Heating circuit pump On	Min. 40°C, Max. 100°C	All (factory setting)
Heating circuit pump Off	Min. 0°C, Max. 60°C	All (factory setting)
Outdoor temperature MAX	Min. 0°C, Max. 50°C	All (factory setting)
Outdoor temperature MIN	Min. -50°C, Max. 15°C	All (factory setting)
Frost protection	Min. -50°C, Max. 50°C	All (factory setting)
Heating mode	Min. -50°C, Max. 50°C	All (factory setting)
Reduced mode	Min. -50°C, Max. 50°C	All (factory setting)

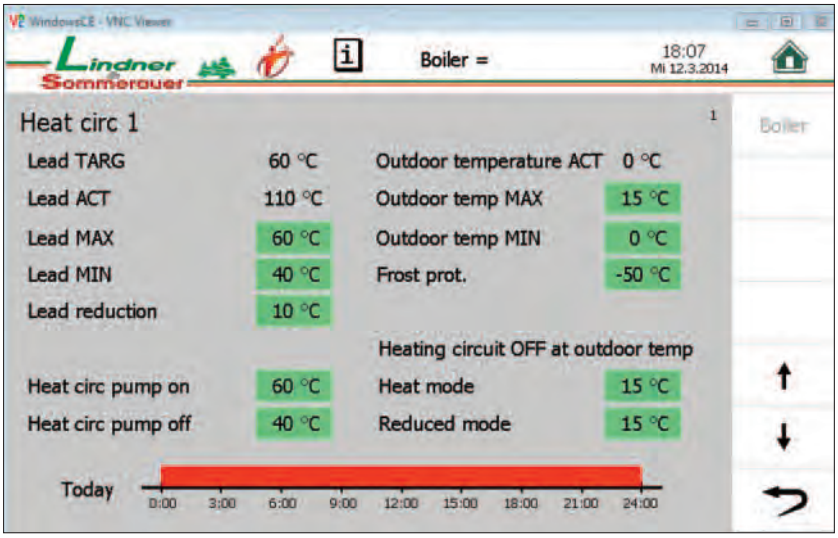


Fig. 6-140: Heat distribution, heating circuit 1

6.5 Heating Circuit, Mo-Su Individual Settings

The time of day operation is used as weekend programme or during the transitional period between the seasons when the full heating power is no longer required.

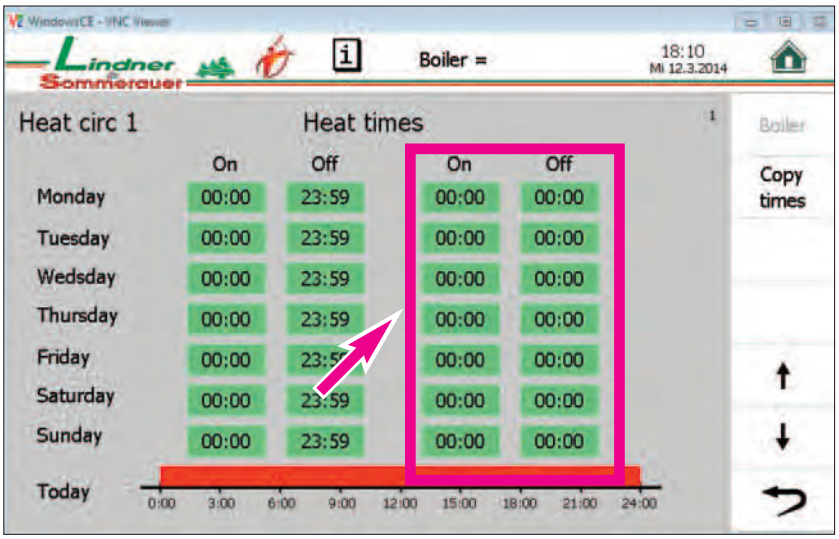


Fig. 6-150: One switch-on and switch-off time /day = changing these values

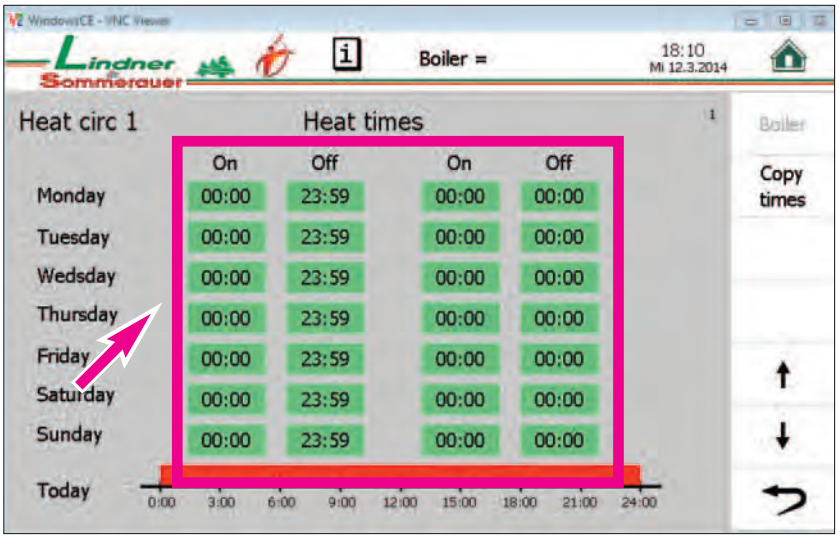


Fig. 6-160: Two switch-on and switch-off times /day = changing these values

For each day of the week two different heat times can be defined. Outside these heat times the system is run in reduced heating mode. As factory setting the heat time is defined from 00:00 a.m. to 23:59 p.m., which means that the regular heating mode is run around the clock from midnight to midnight. In the factory setting, no reduced heating mode is pre-defined.

6.5.1 Change Switch-on and Switch-off Times

Example: 2 heat time settings for Monday

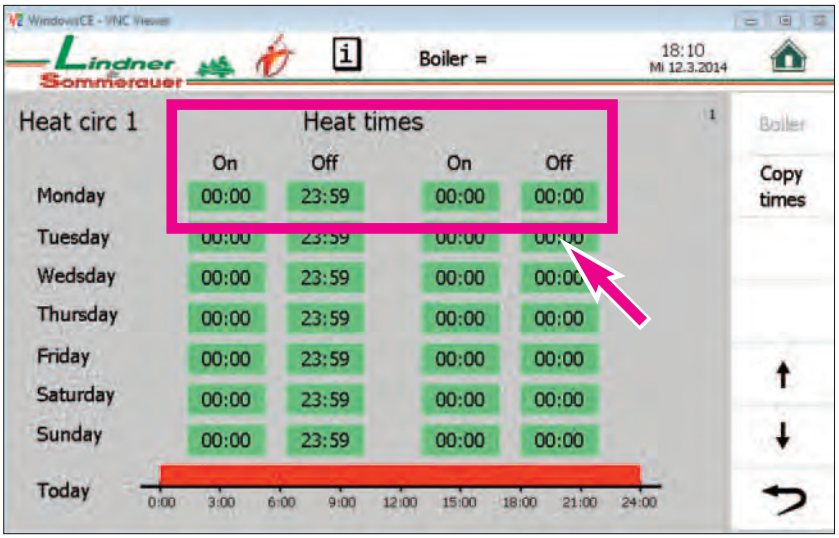


Fig. 6-170: Heating circuit 1, heat times for Monday

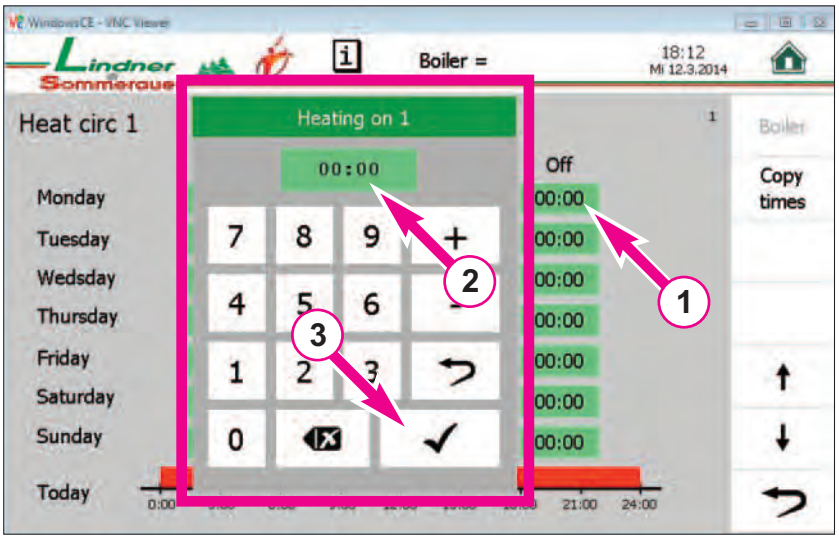


Fig. 6-180: Click on individual values (1), enter (2), confirm (3)

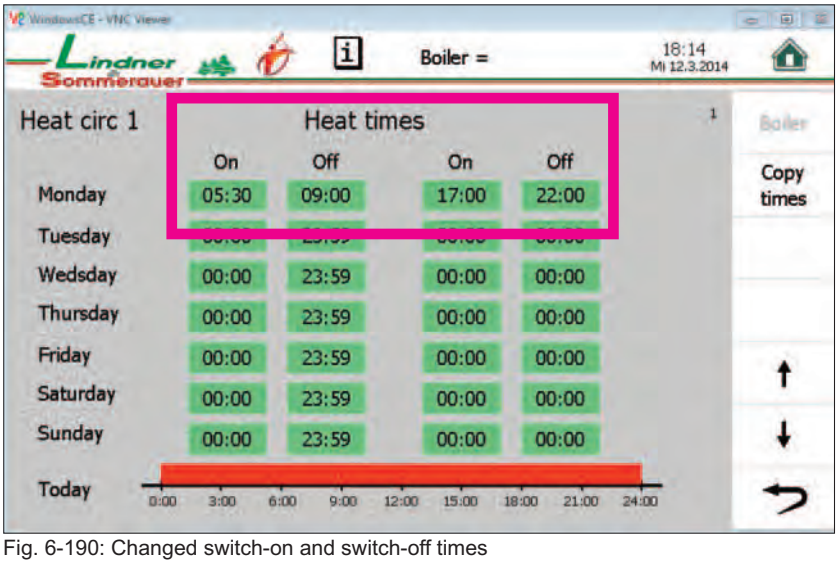


Fig. 6-190: Changed switch-on and switch-off times

6.5.2 Copy Switch-on and Switch-off Times

The changed switch-on and switch-off times can now be transferred from Monday to the desired other days.

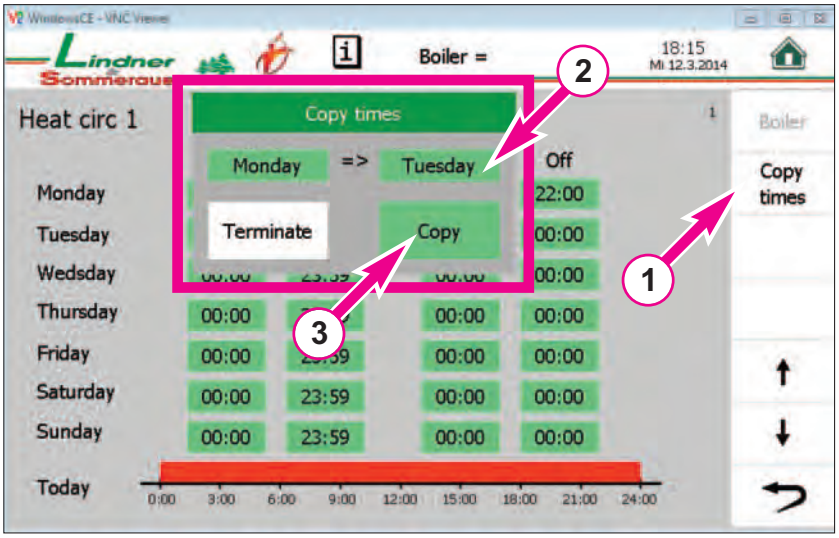


Fig. 6-200: Click on Copy times (1), enter day (2), click on Copy button (3)

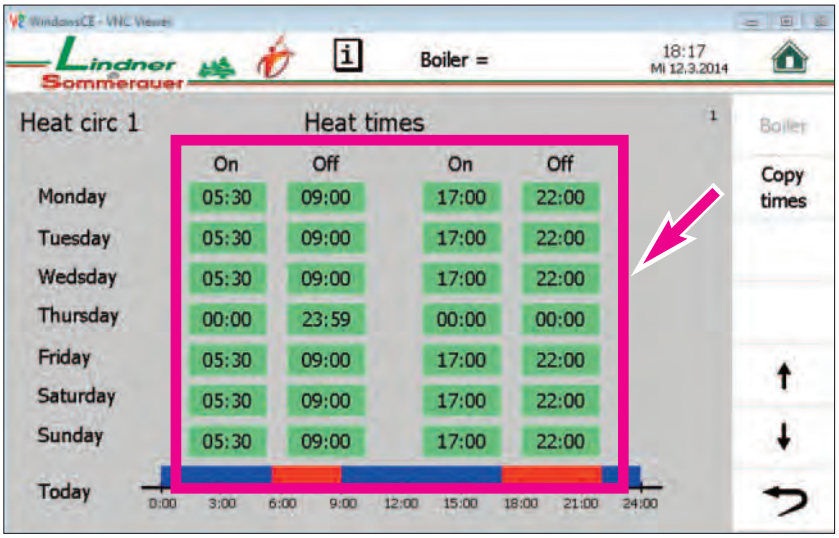


Fig. 6-210: Changed switch-on and switch-off times

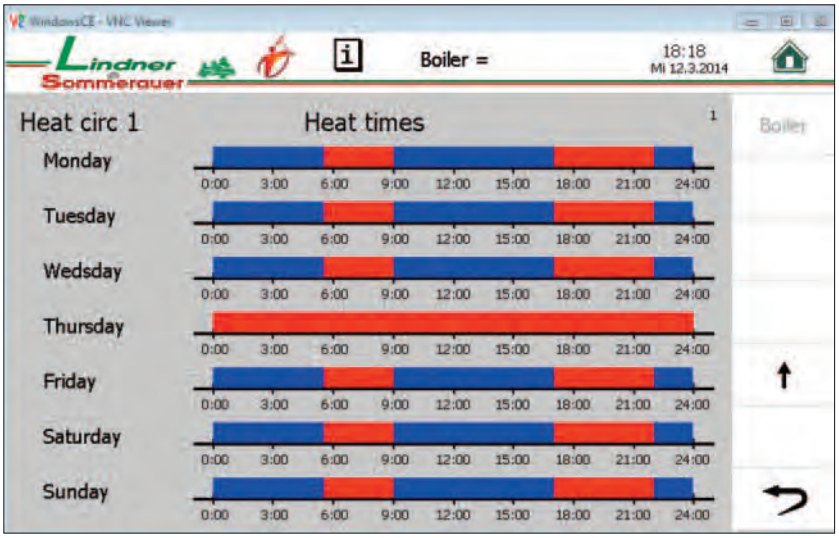


Fig. 6-220: Result of changed settings in the week overview

6.5.3 Heating Circuit, Week Overview

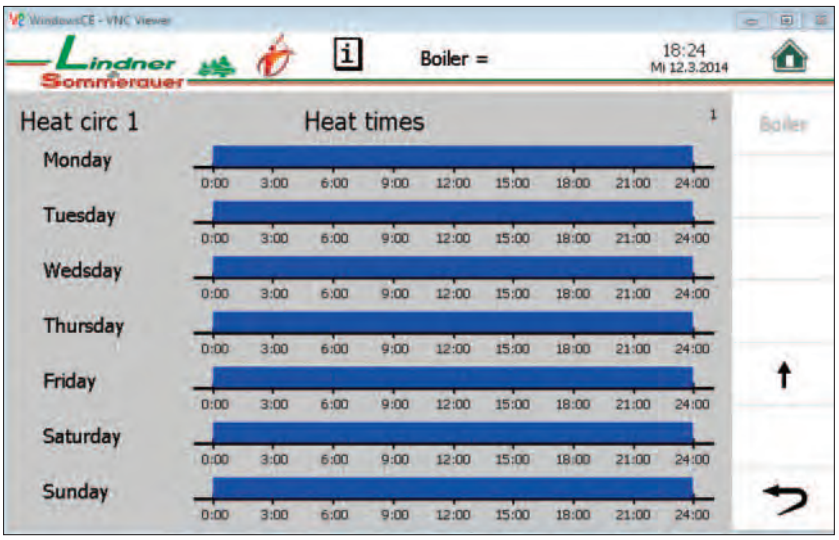


Fig. 6-230: Heating circuit 1, week overview

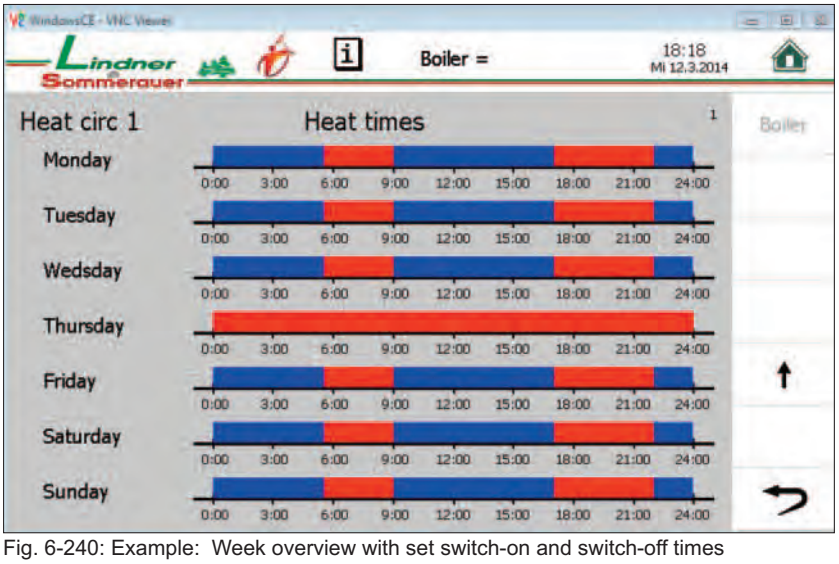


Fig. 6-240: Example: Week overview with set switch-on and switch-off times

7

Heat Distribution
DHW Tank

7.1 DHW Tank

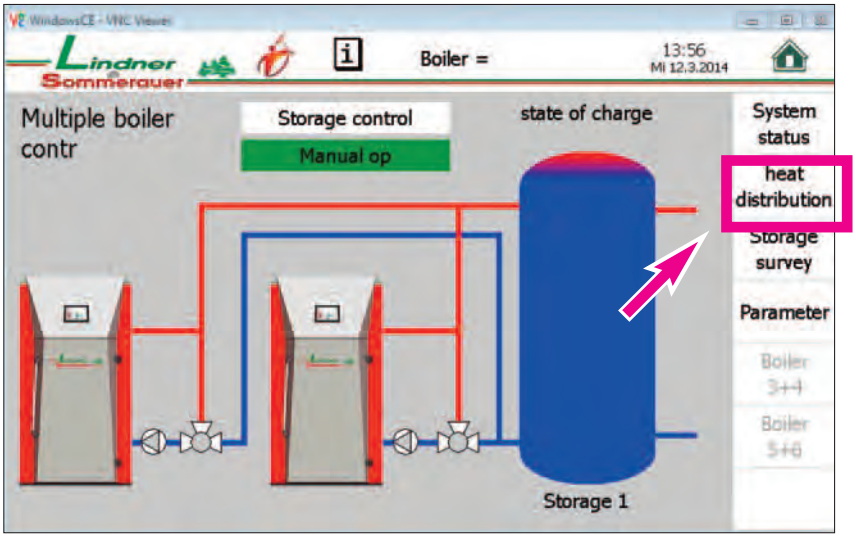


Fig. 7-010: Main menu

Fig. 7-020:Heat distribution overview

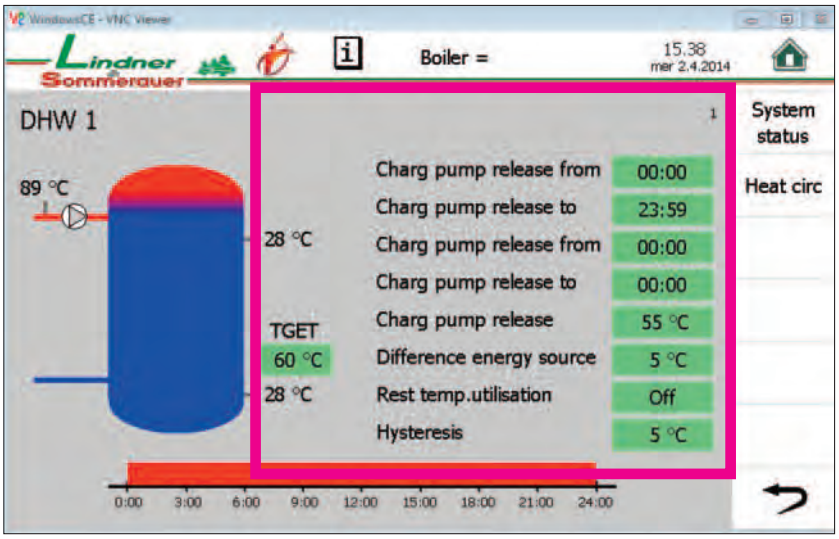


Fig. 7-030:Heat distribution DHW tank

Up to 24 DHW tanks (1 temperature sensor) or 8 buffer storages (2 temperature sensors) and 8 DHW tanks (1 temperature sensor) can be managed and operated independently of each other by the control system.

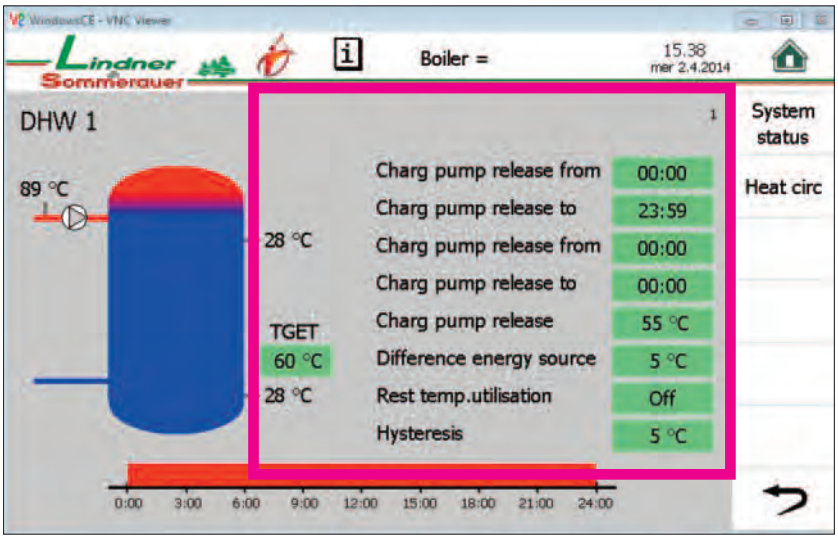


Fig. 7-040: Heat distribution DHW tank

DHW tank	
Bezeichnung	**Explanation**
Source temperature	Display of the source temperature (heating boiler or buffer storage), charge pump is running (green symbol).
DHW tank TARGET	Target temperature (green input field, at this temperature the DHW tank charging process will stop) and the current DHW tank temperature.
Charge pump release from/to	Here two time windows can be defined during which the charge pump is running. If the switch-off time as specified by the parameter „Charge pump release to“ is reached during charging of buffer storage or DHW tank, the charging process will stop. This will also happen when you defined a DHW tank with two sensors (buffer storage). The charge pump will switch off and thus the boiler can also shut down in a controlled way.
Charge pump release	At the temperature the charge pump will start.
Difference energy source	If the energy source is hotter than the energy demand (DHW tank, buffer and/or storage) by a minimum of e.g. 5°C charging is effected.

DHW tank	
Bezeichnung	**Explanation**
Rest temperature utilisation	When the DHW tank has reached its target temperature the charge pump will switch off. If there is some energy left in the heating boiler the DHW tank could be charged with this rest energy until the corresponding temperature difference is reached.
Hysteresis	When the DHW tank, buffer and/or storage has reached the target temperature the charge pump will stop. If the temperature falls by the value defined in the hysteresis the charge pump will be started again.

7.1.1 Setting Options

Setting options – DHW tank		
Designation	**Setting option**	**Password level**
Charge pump release from		All (factory setting)
Charge pump release to		All (factory setting)
Charge pump release from		All (factory setting)
Charge pump release to		All (factory setting)
Charge pump release	Min. 10°C, Max. 70°C	All (factory setting)
Difference energy source	Min. 0°C, Max. 10°C	All (factory setting)
Resttemp. Utilisation	EIN/AUS	All (factory setting)
Hysteresis	Min. 2°C, Max. 30°C	All (factory setting)
TARGET	Min. 10°C, Max. 90°C	All (factory setting)

7.1.2 Changing of Values

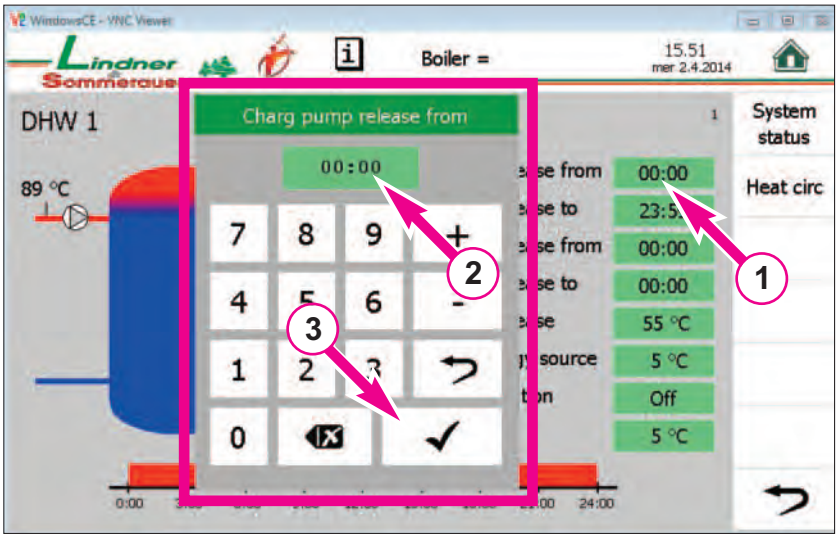


Fig. 7-050: Click on individual values (1), enter (2), confirm (3)

8

Storage Overview

8.0 Storage Overview

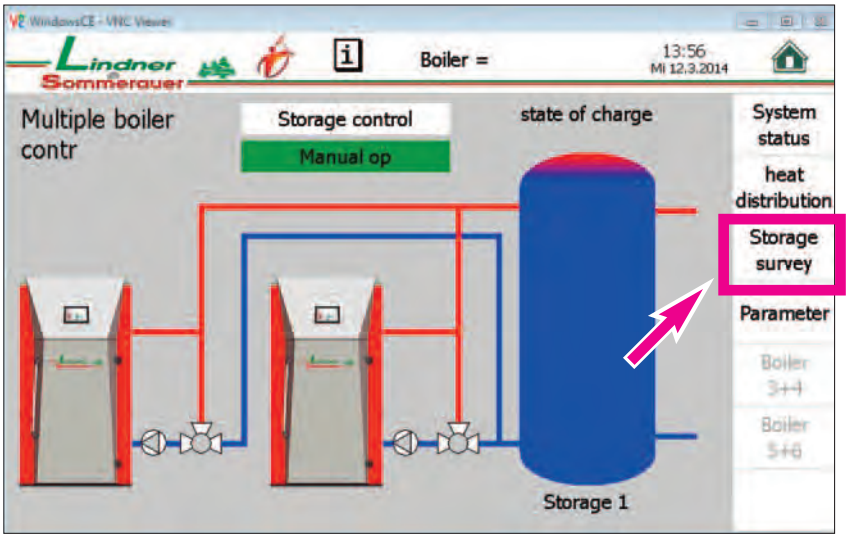


Fig. 8-010: Main menu storage overview

8.1 Storage Overview 1-4

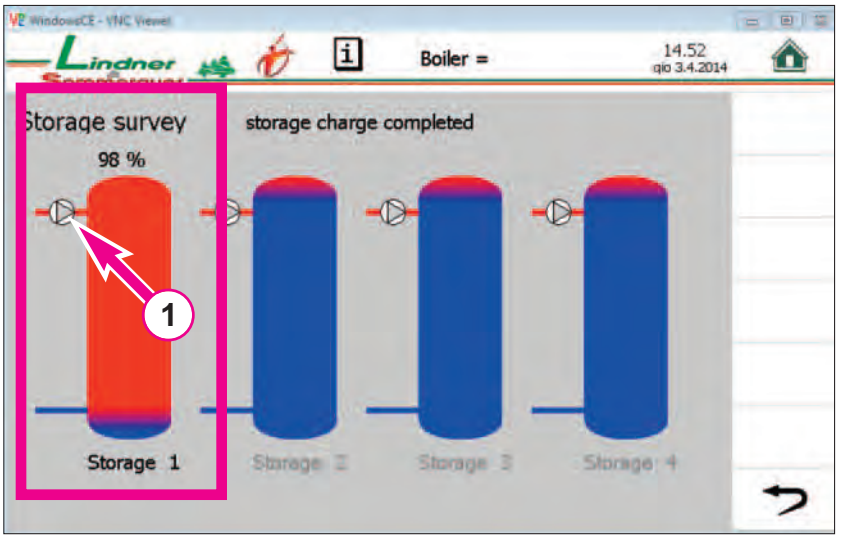


Fig. 8-020: Storage overview

At all the active storages the state of charge is displayed. Furthermore you can see whether the pump is running (green pump symbol) or not (grey pump symbol ❶).Storages which have not been activated bear a grey designation.

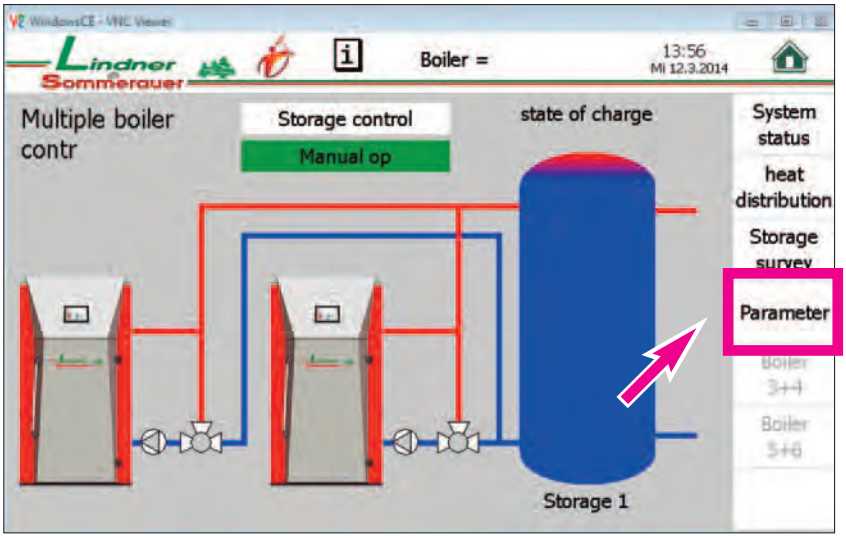
For further informationen see Chapter 4. Storage Control.

8

9

Parameters

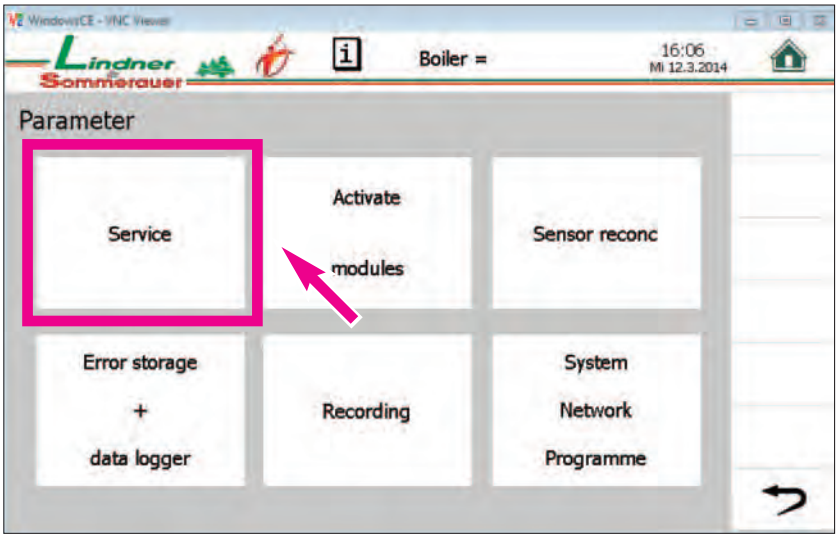
9.0 Parameters



Parameter

Fig. 9-010: Main menu

9.1 Service



Service

Fig. 9-020: Parameters, Overview

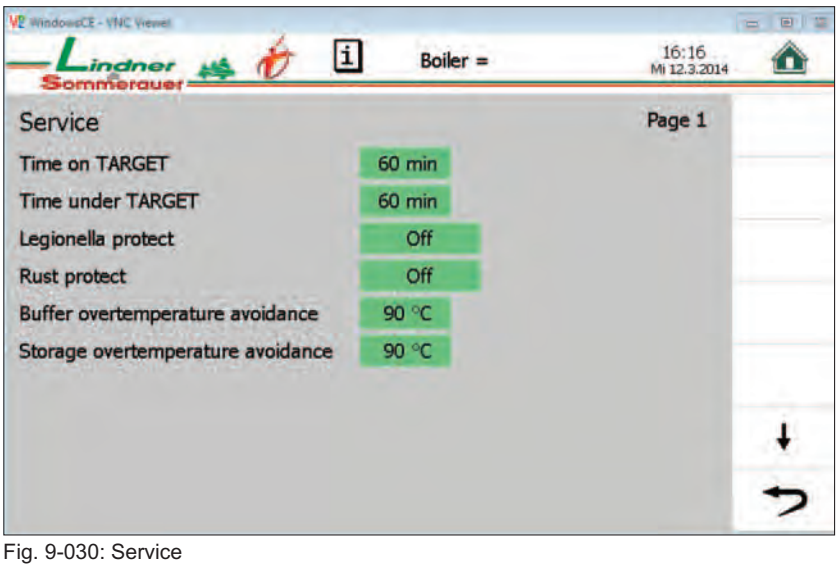


Fig. 9-030: Service

9.1.1 Service Page

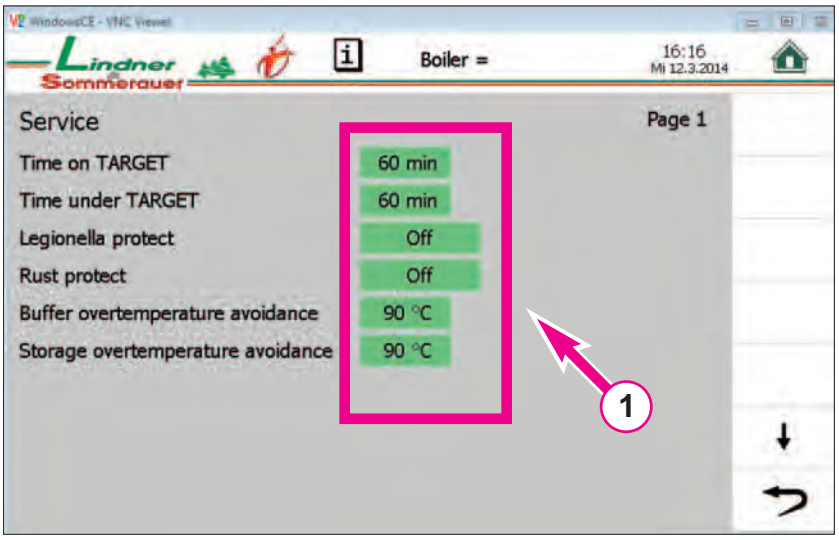


Fig. 9-040: Service, 1) Select setting

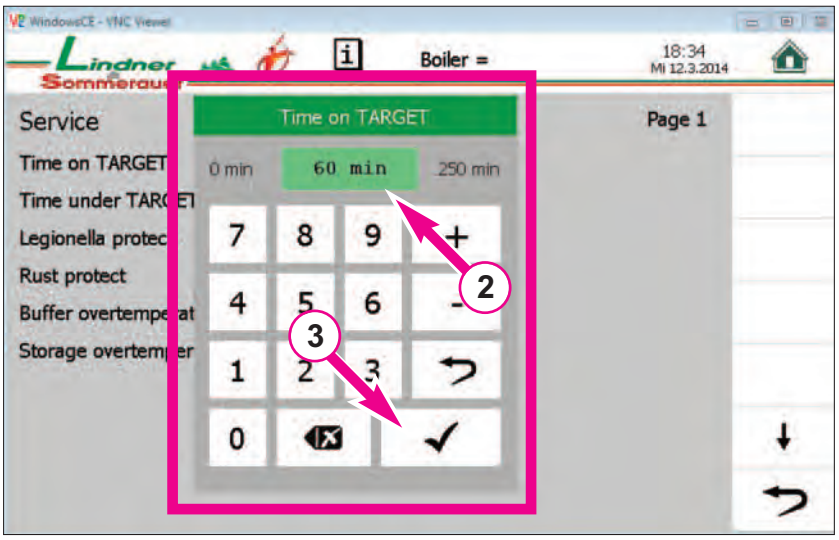


Fig. 9-050: Service, 1) Click on value, 2) enter value, 3) confirm

Setting Options – Service		
Designation	**Setting option**	**Passwortebene**
Time on TARGET	Min. 0 min, Max. 250 min	All (factory setting)
Time under TARGET	Min. 0 min, Max. 250 min	All (factory setting)
Legionella protection	Mo-So, Aus	All (factory setting)
Rust protection	Mo-So, Aus	All (factory setting)
Buffer overtemp. avoid.	Min. 80°C, Max. 110°C	All (factory setting)
Storage overtemp. avoid.	Min. 80°C, Max. 110°C	All (factory setting)

Parameter, Service	
Designation	**Explanation**
Time on TARGET	After this definable time the first boiler (of 6 possible ones) will switch off. When the specified period has passed a second time, the next one switches off, and so on until only 1 boiler is left running.
Time under TARGET	After this definable time the first boiler (of 6 possible ones) will switch on. When the specified period has passed a second time, the next one switches on, and so on until all the boilers are running again.
Legionella protection	In order to prevent germ formation a day in the week can be specified on which the DHW tank is heated up to >70°C.
Rust protection	If the rust protection feature was activated for a certain day, it will start on that specified day at 12:00 noon. The charge pumps are switched on for one minute, and the heating circuit mixer will get an Open signal for five minutes and a Closed signal for six minutes, while the running time is also taken into account by the heating circuit mixer.
Buffer overtemperature avoidance	When the defined temperature is reached, all the pumps which are directly supplied by the buffer will be activated: • DHW tank pumps at the buffer storage • Heating circuit pumps directly at the buffer storage • Transfer pump
Storage overtemperature avoidance	When the defined temperature is reached, all the pumps which are directly supplied by the buffer will be activated: • DHW tank pumps • Buffer storage pumps • Heating circuit pumps of the storage • Transfer pump (network pump is not affected)

9.1.2 Service Motor Module - Maximum Power Intake

For the different driving motors connected to the multi boiler control system the power limits can be adapted.

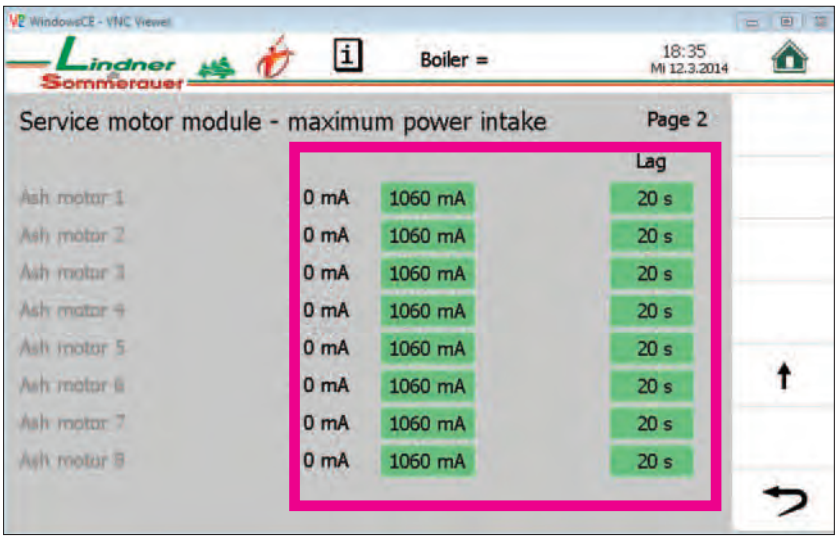


Fig. 9-060: Parameter Service, page 2

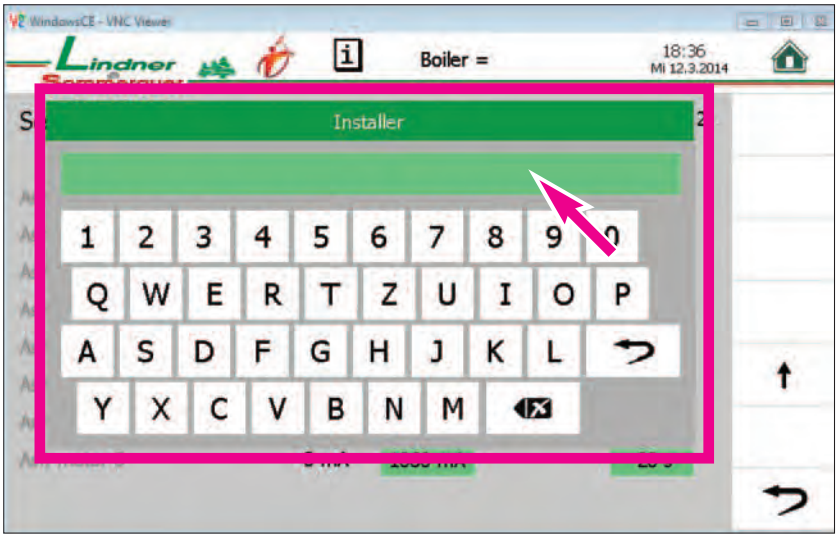
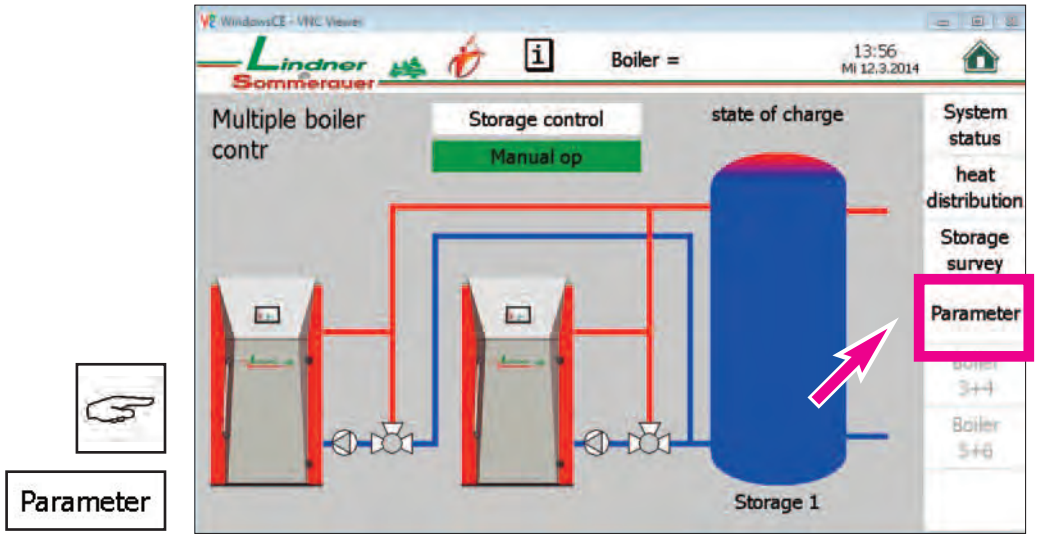


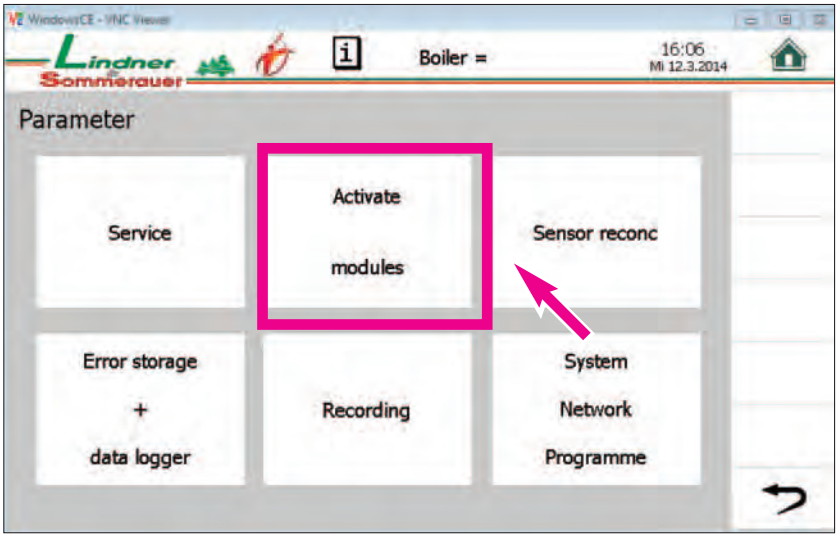
Fig. 9-070: Enter password and change values

9.2 Activate Modules



Parameter

Fig. 9-080: Main menu



Activate modules

Fig. 9-090: Parameters, Overview

9.2.1 Activate Heating Circuit, Enter Designation

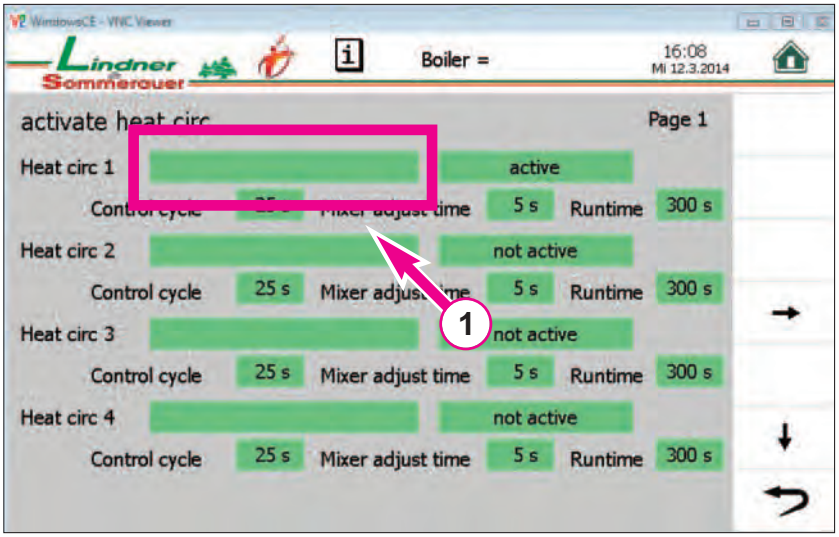


Fig. 9-100: Heating circuit 1, click on field (1) and ...

Fig. 9-110: ... type in heating circuit designation (2) and confirm with button (3).

9.2.2 Activate Heating Circuit, Activate Function

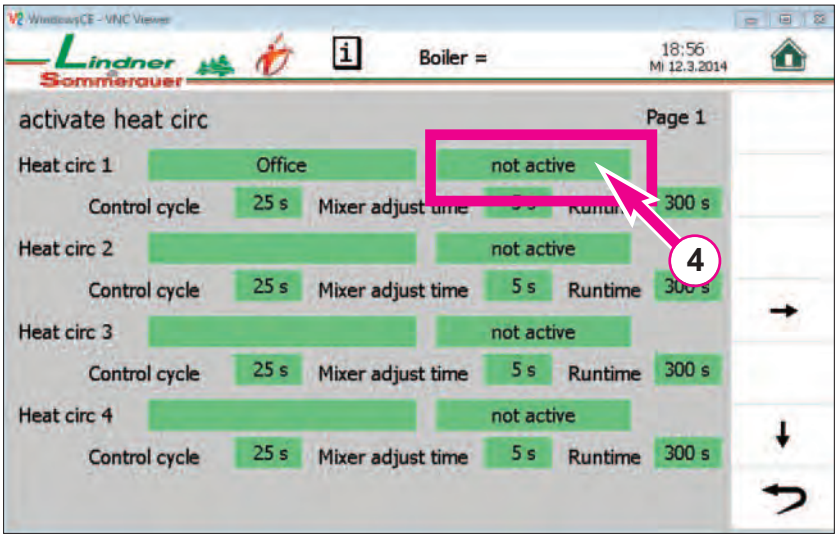


Fig. 9-120: Heating circuit 1, click on field (4) and ...

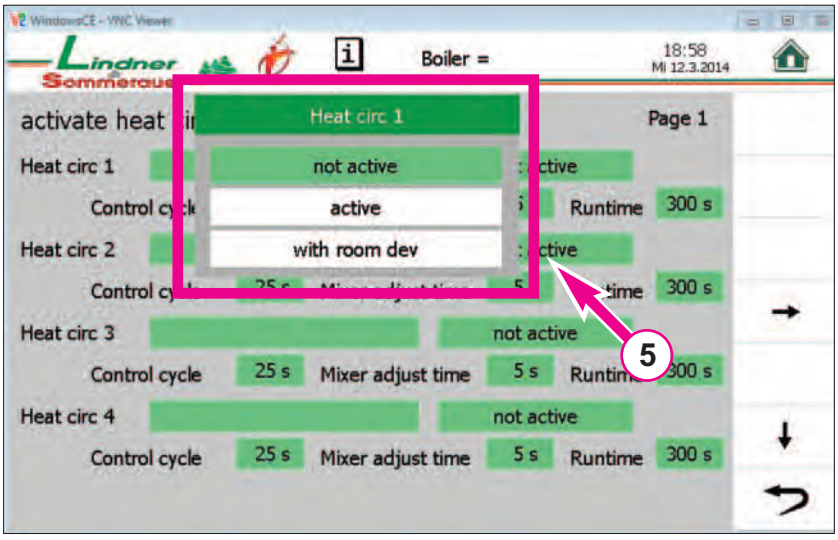


Fig. 9-130: ... select desired function (5)

Setting options	
Designation	Explanation
Not active	Factory setting: As delivered all the heating circuits are de-activated.
Active	The heating circuit will work during the times as specified under Heating Circuit (Start screen).
With room device	If a room device is available, the control will be managed through the room device.

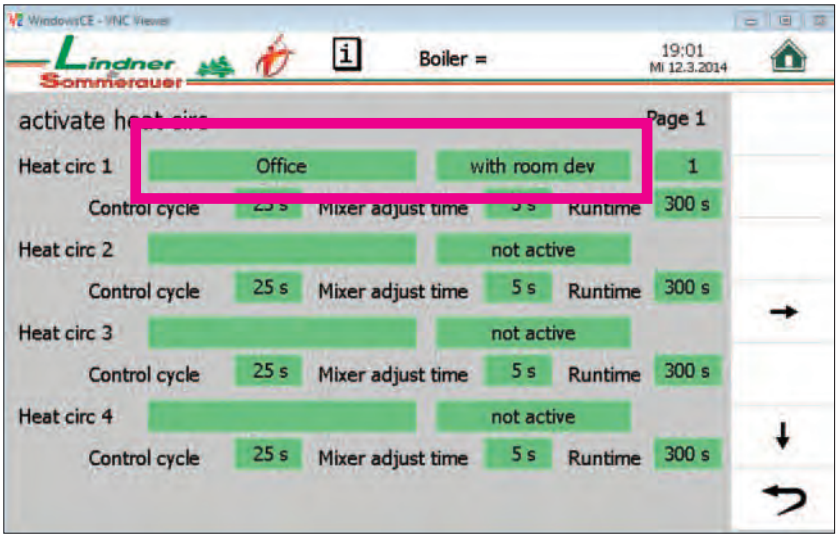


Fig. 9-140: Heating circuit 1, working room (office) with room device active

9.2.3 Activate Heating Circuit, Control Cycle

In the interval as given by the control cycle the „Feed flow ACTUAL“ and „Feed flow TARGET“ temperatures are compared, and the mixers will regulate accordingly. If your mixer continues to adjust from one extreme to the other, increase the specified interval time value. This gives the slow-reacting temperature sensor more time to adapt.

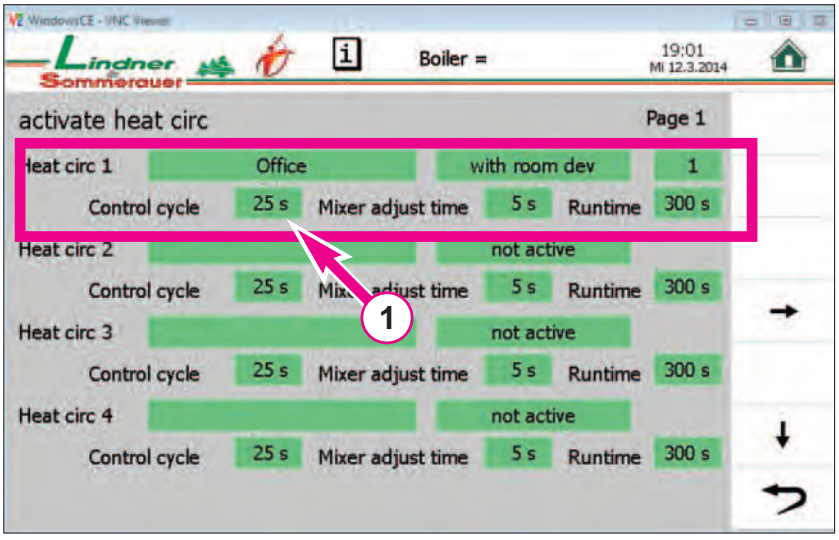


Fig. 9-150: Heating circuit 1, click on the required value (1)...

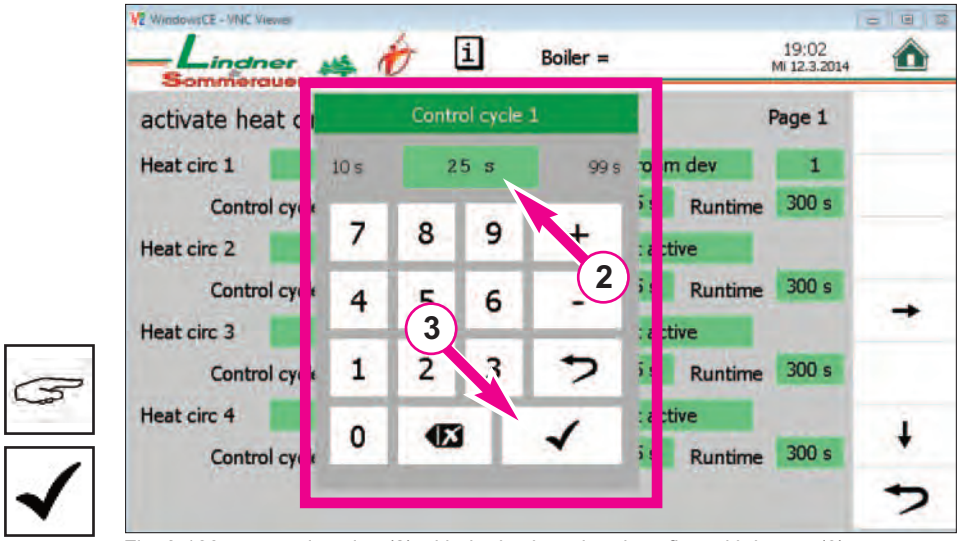


Fig. 9-160: ... type in value (2) with the keyboard and confirm with button (3)

9.2.4 Activate Heating Circuit, Mixer Adjust Time

If the „Feed flow ACTUAL“ temperature is higher or lower by more than 15°C than the „Feed flow TARGET“ temperature, the mixer adjust time will be tripled. If the „Feed flow ACTUAL“ temperature is within ± 15°C, the control cycle is clocked at that value in seconds which is set here. If the „Feed flow ACTUAL“ temperature is within a ± 1°C range no adjustment of the mixer is required.

9.2.5 Activate Heating Circuit, Runtime

If the mixer gets only „Closed“- signals during the period as set under runtime because the „Feed flow ACTUAL“ temperature is higher than the „Feed flow TARGET“ temperature, it will assume that no energy is demanded and the pump will switch off. When the temperature falls below the „Feed flow TARGET“ temperature it will switch on again. If the runtime is set to 500 seconds (OFF) the heating circuit pumps are running in continuous operation.

Setting options

Setting options - Activate heating circuit		
Designation	**Setting option**	**Password level**
Control cycle	Mind. 10 sec, Max. 99 sec.	All (factory setting)
Mixer adjust time	Mind. 1 sec, Max. 80 sec.	All (factory setting)
Runtime	Mind. 10 sec, Max. 500 sec.	All (factory setting)

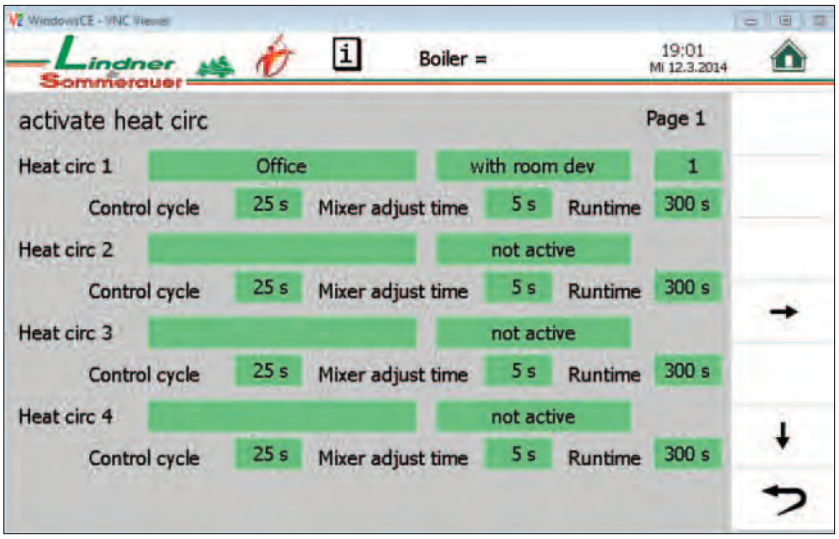


Fig. 9-170: Heating circuit 1

9.2.6 Activate DHW Tank, Designation

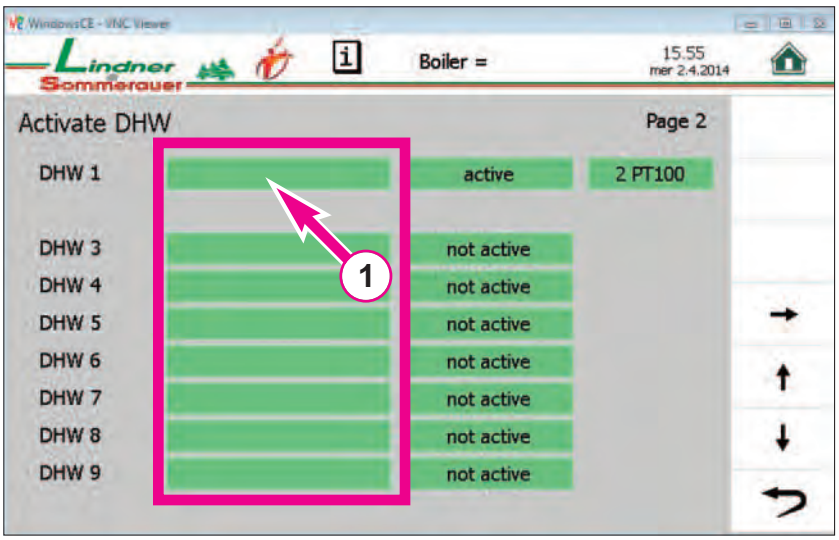


Fig. 9-180: Click on selection field (1) and ...

Fig. 9-190: ... type in designation (2) with the keyboard and confirm with button (3)

9.2.7 Activate DHW Tank, Activation Status

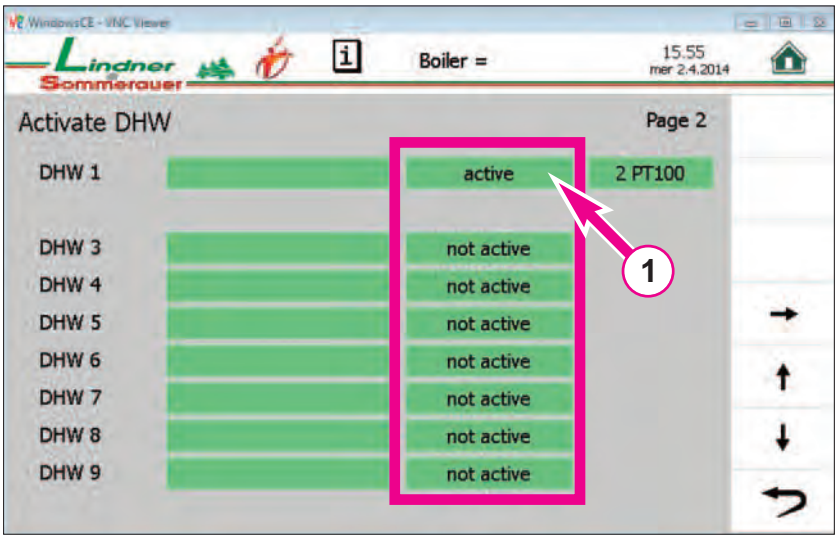


Fig. 9-200: Click on selection field (1) and ...

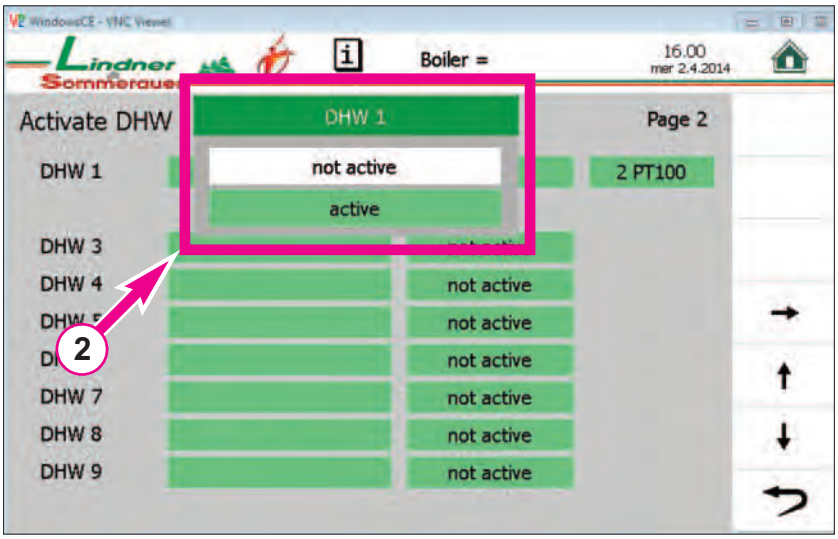


Fig. 9-210: ... select desired function (2)

The DHW tank 1 is activated as buffer 1 with two temperature sensors (2 PT100). The temperature sensor of DHW tank 2 is used as second PT100 for the DHW tank 1 and is therefore hidden. DHW tank 3 is defined as DHW tank with one temperature sensor. By clicking on the arrow to right you get to the DHW tanks 10 to 24.

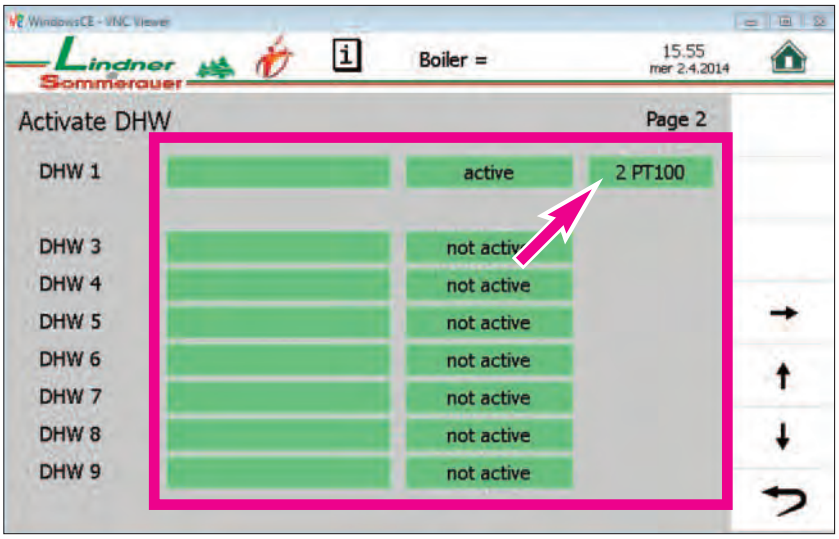


Fig. 9-220: Activate DHW tanks

Only the DHW tanks 1, 4, 7, 10, 13, 16, 19, 22 provide the possibility to define the parameters as described at the following figure.

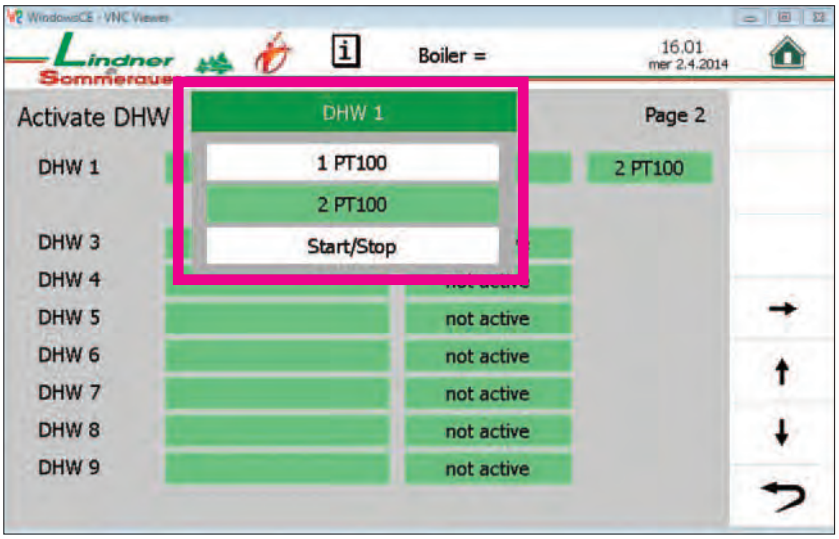


Fig. 9-230: Click on designation field and ...

1 PT100: Standard setting start page - DHW tank.
2 PT100: The DHW tank can be converted here to a two-sensor mode (used mainly in buffer operation in order to attain exact stratification). The sensor „B1“ is mounted as switch-on sensor at the top, the sensor „B2“ as switch-off sensor at the bottom. For an additionally installed service water DHW tank the sensor „B3“ is used.Start/Stopp: The charging of the DHW tank starts when the start temperature is reached and stops when the TARGET temperature is reached.

9.2.8 Activate Storage, Designation

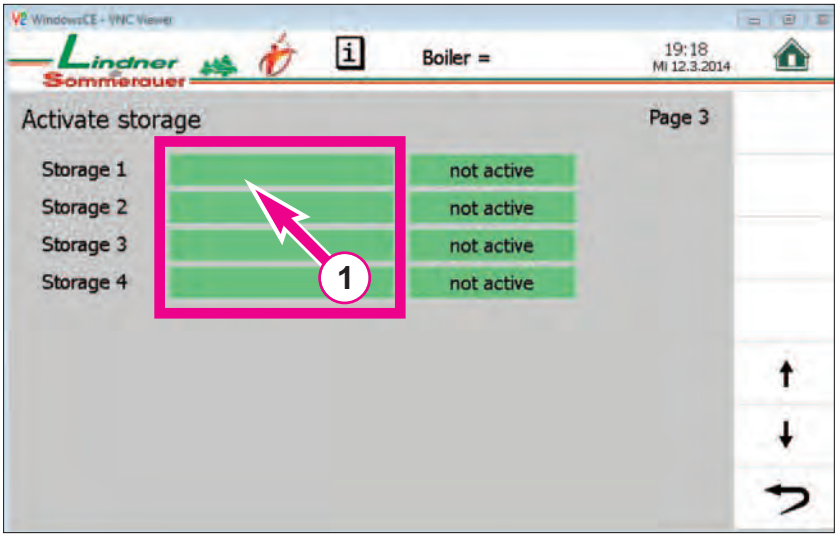


Fig. 9-240: Click on designation field and ...

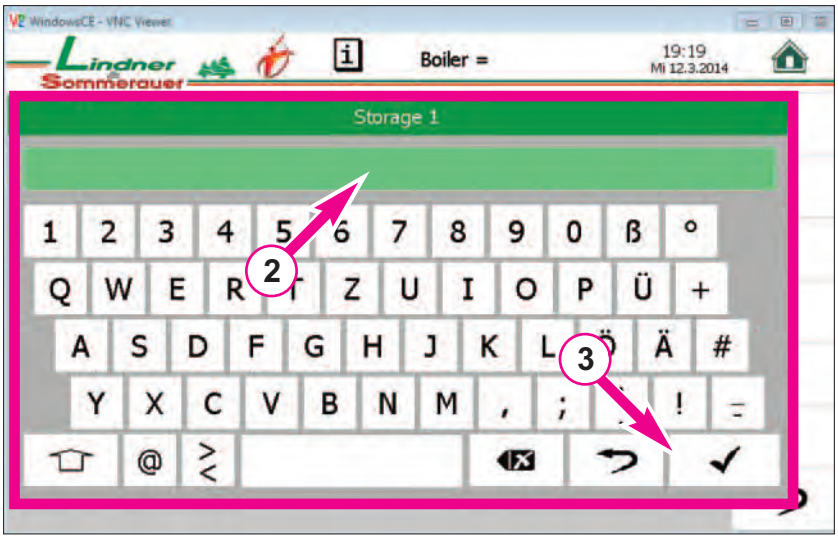


Fig. 9-250: Type in designation (2) and confirm with button (3)

9.2.9 Activate Storage, Activation Status

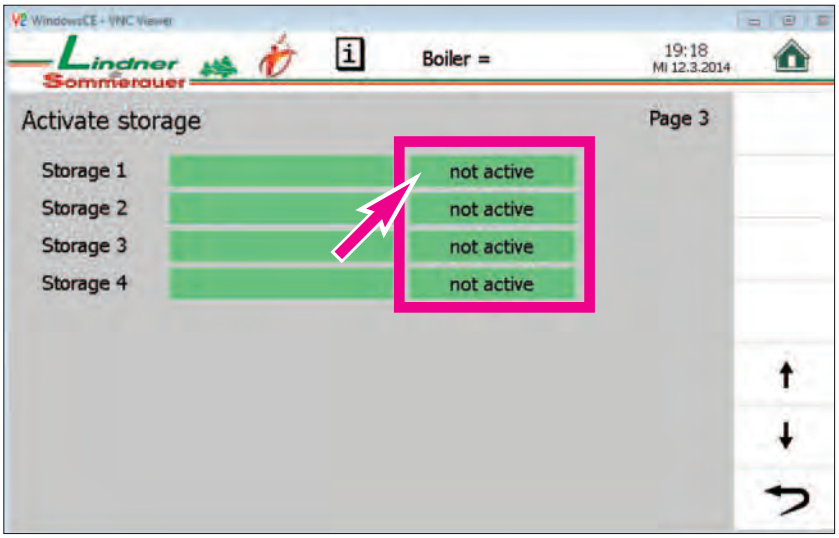


Fig. 9-260: Click on designation field and ...

If a storage module is available, the storage can be activated here.

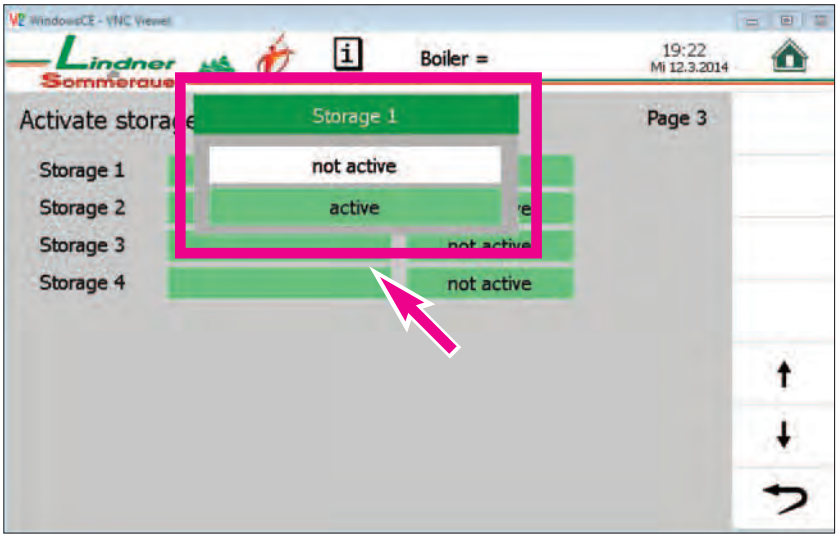


Fig. 9-270: ... select the desired function

9.2.10 Service, Assignment Buffers

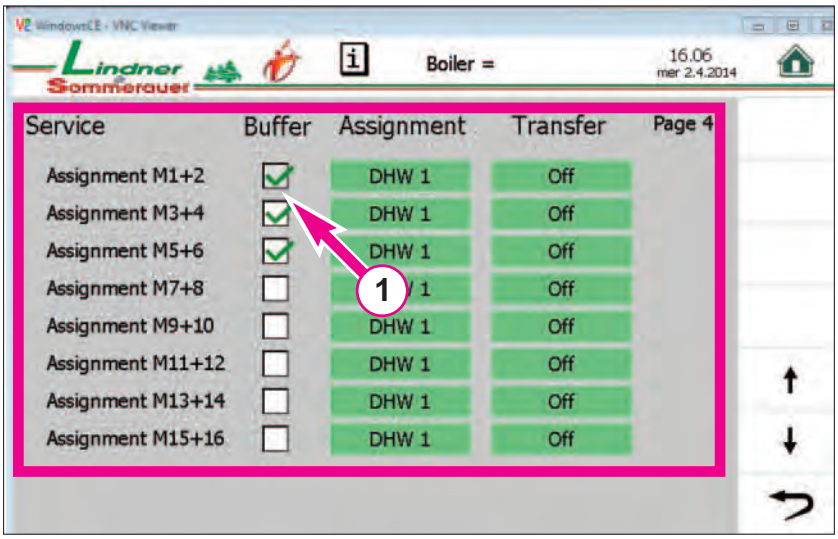


Fig. 9-280: Activate assignment buffers (1)

In the above example the heating circuits 1 to 6 are assigned to DHW tank 1. Which means that the heating circuits will distribute the heat when the required minimum temperature is available in the buffer (DHW tank 1). This happens independent of the temperatures at the heating boiler.
The buffer will provide the heat required by the heating circuits and requests heat from the heating boiler, if necessary.
Furthermore it is possible to specify here whether a possibly available transfer heating circuit will get the energy directly from the heating boiler (no check mark) or from the buffer (with check mark).
Only the DHW tanks 1, 4, 7, 10, 13, 16, 19, 22 and the storages 1 to 4 provide the possibility to assign the heating circuits.

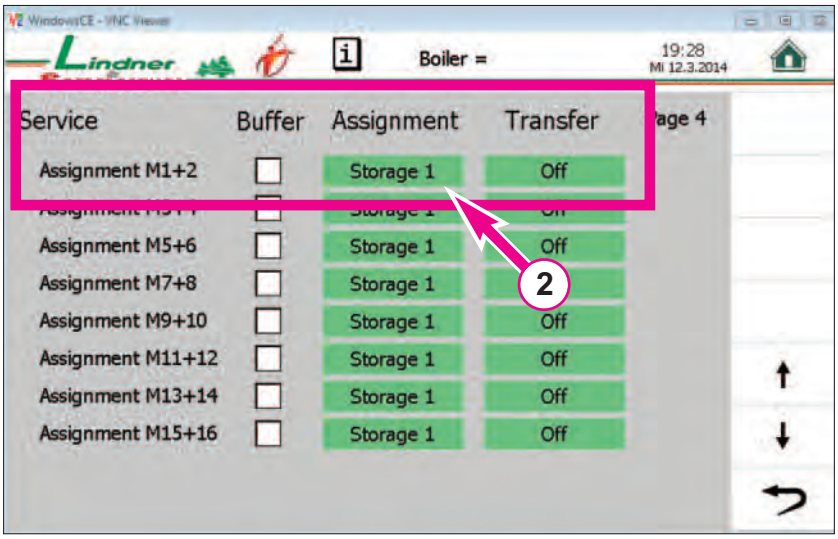


Fig. 9-290: Select assignment (2)

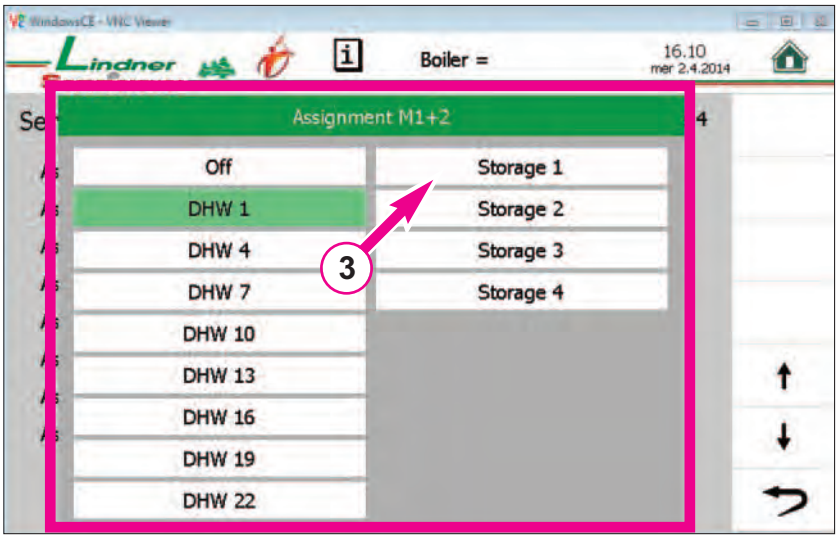


Fig. 9-300: Activate assignment (3)

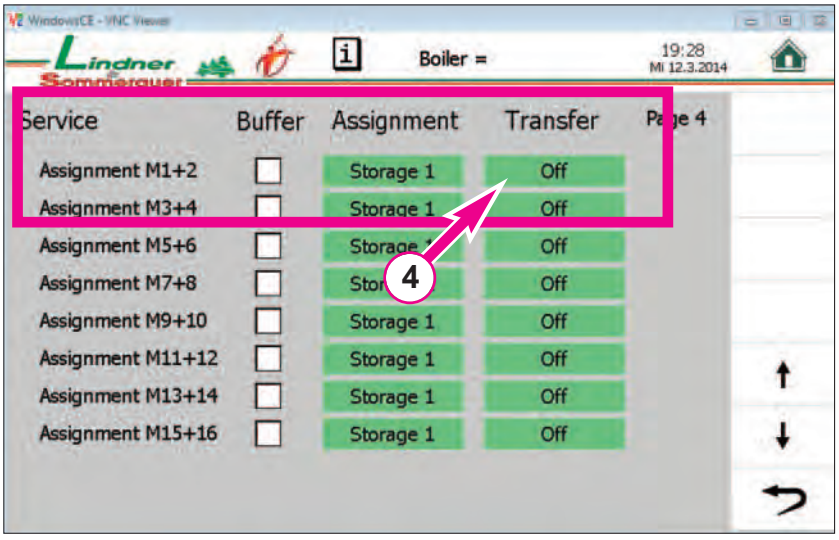


Fig. 9-310: Select transfer (4)

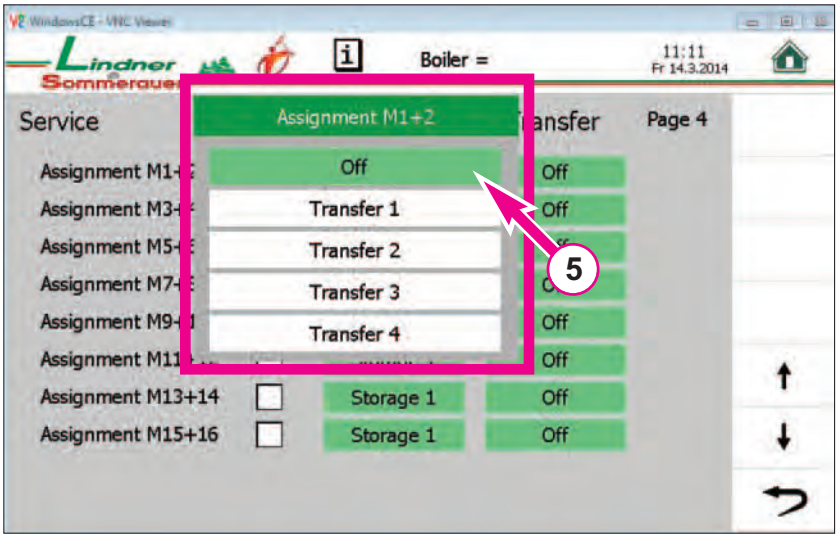


Fig. 9-320: Activate assignment (5)

9.2.11 Activate Transfer Mixer, Designation

Activate transfer mixer: Analogous to the heating circuits the transfer resp. network mixers can be activated.

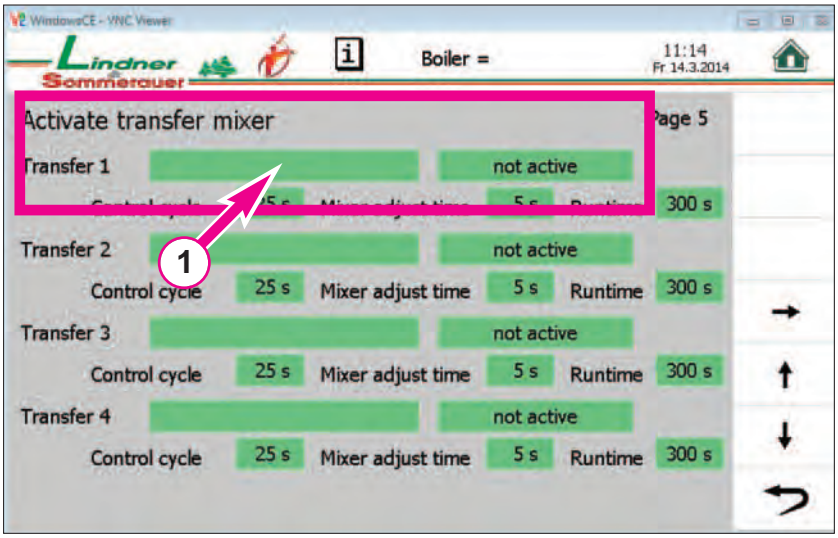


Fig. 9-330: Select tansfer mixer (1), ...

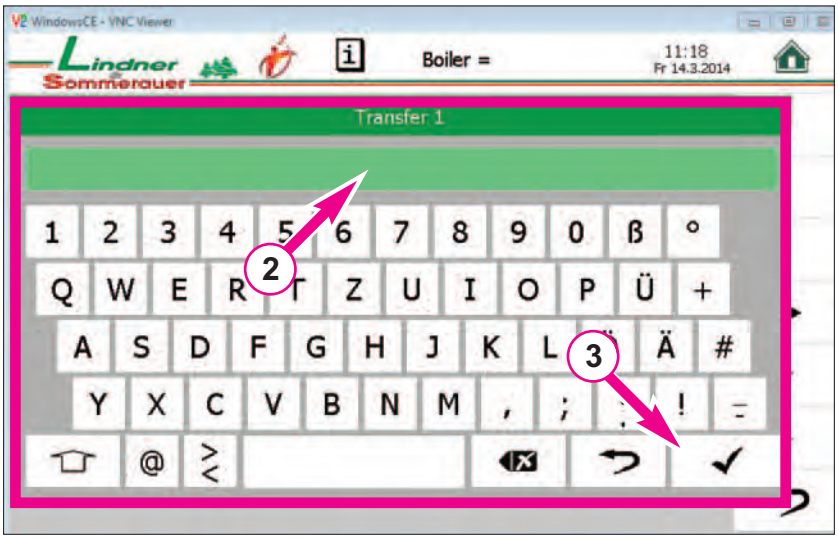


Fig. 9-340: ... designate with keyboard (2) and confirm with button (3)

9.2.12 Transfer Mixer, Activation Status

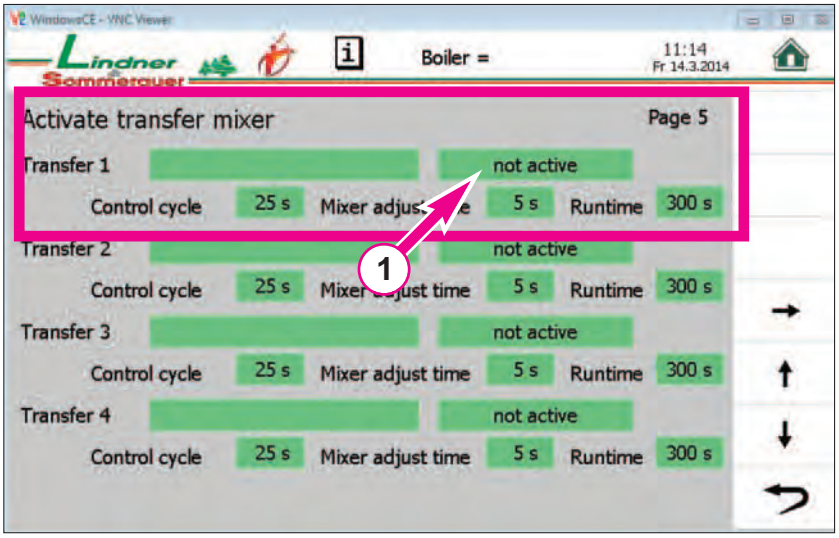


Fig. 9-350: Select activation field (1), ...

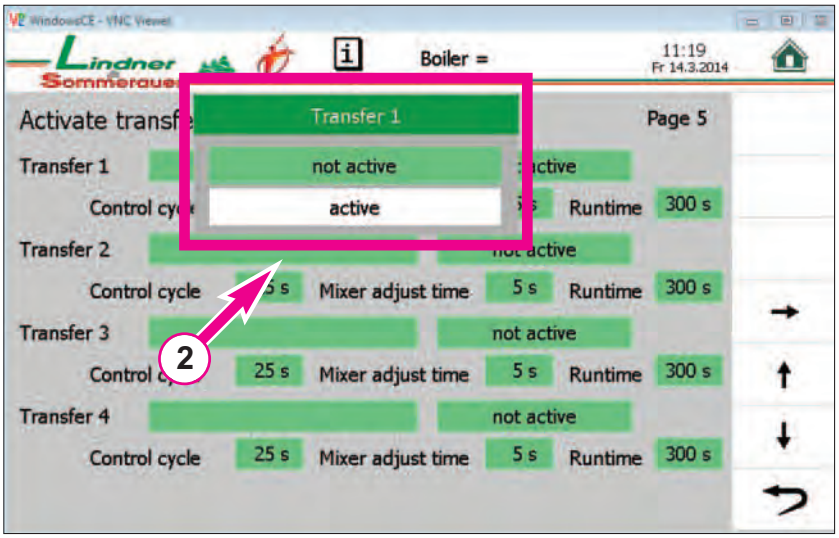


Fig. 9-360: ... select desired function (2)

Setting Values

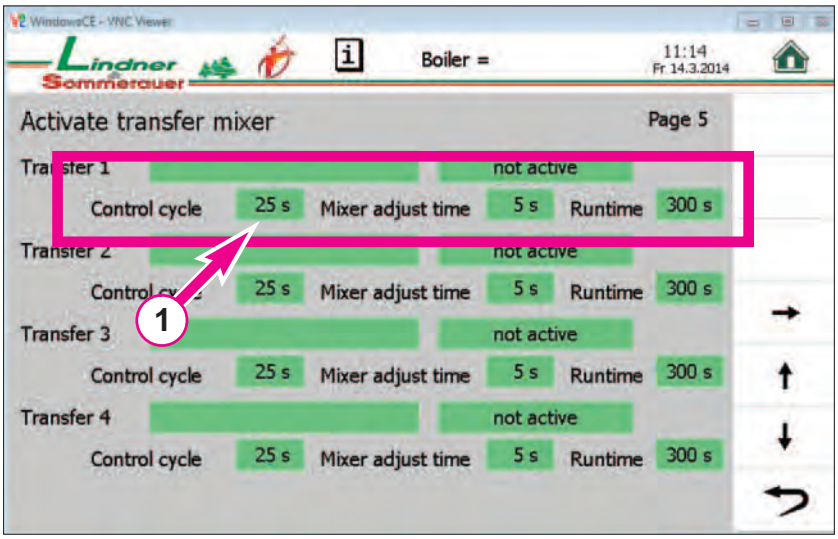


Fig. 9-370: Select activation field (1), ...

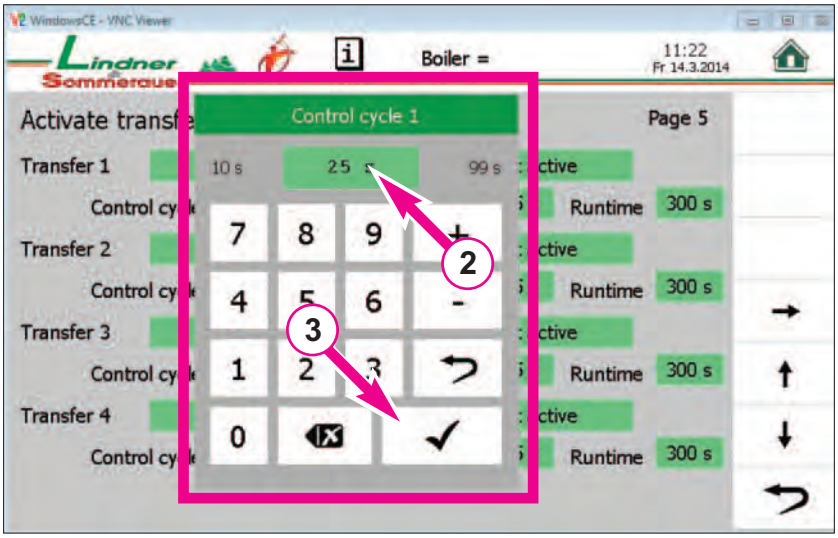


Fig. 9-380: ... type in desired value (2) and confirm with button (3)

Setting options – Transfer mixer		
Designation	**Setting option**	**Password level**
Control cycle	Mind. 10 sec, Max. 99 sec.	All (factory setting)
Mixer adjust time	Mind. 1 sec, Max. 80 sec.	All (factory setting)
Runtime	Mind. 10 sec, Max. 500 sec.	All (factory setting)

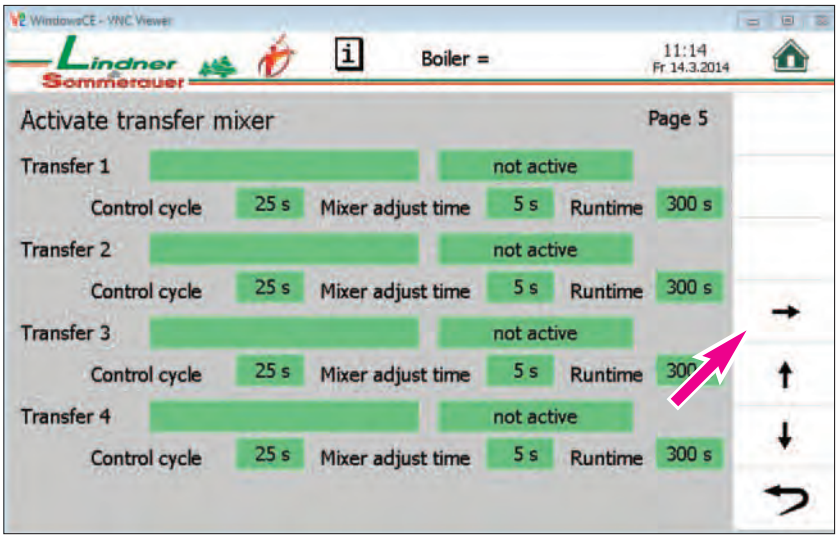


Fig. 9-390: To the network mixer

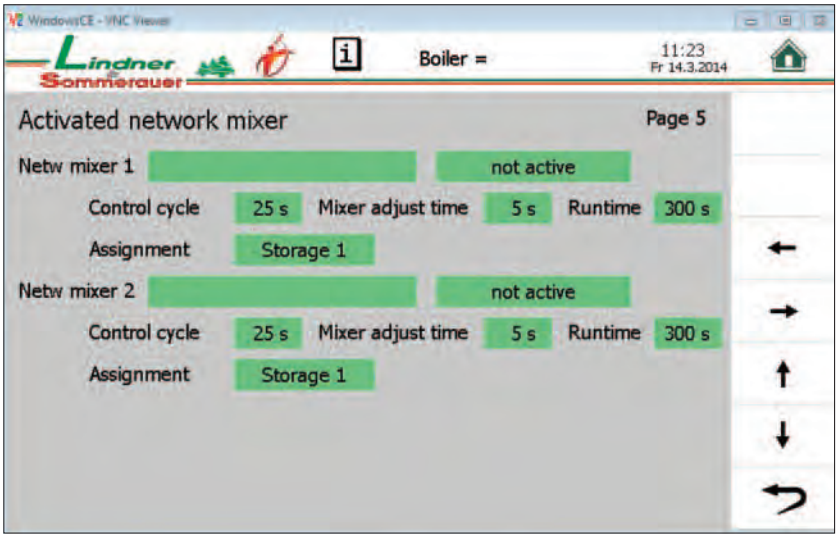


Fig. 9-400: Activate network mixer

9.2.13 Activate Motor Module

Here it is possible to define which motor is to start working when the cleaning process commences at the boiler.

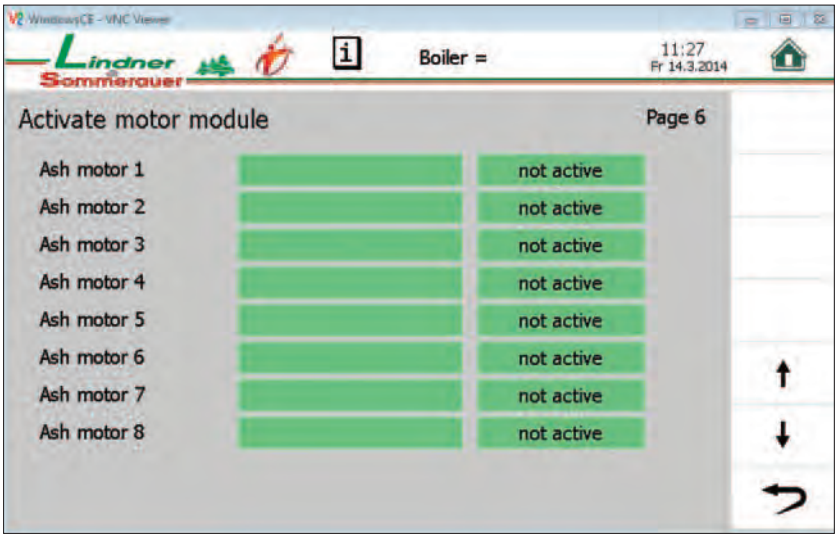


Fig. 9-400: Activate Motor Module

9.2.14 Activate Boiler

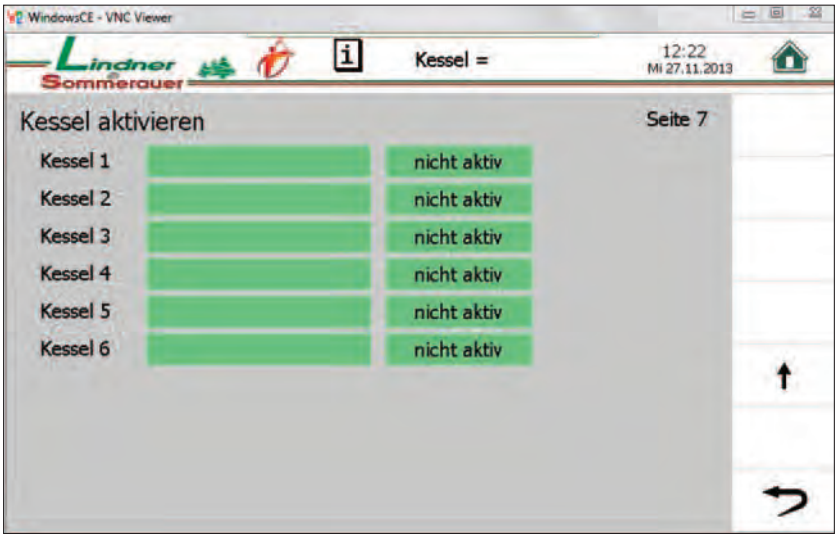
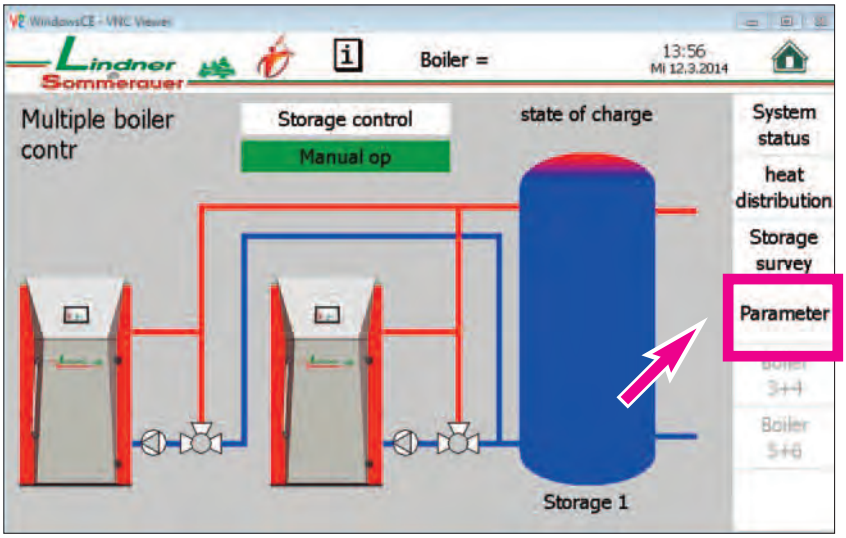


Fig. 9-410: Activate boiler

9.3 Sensor Reconciliation



Parameter

Fig. 9-420: Main menu

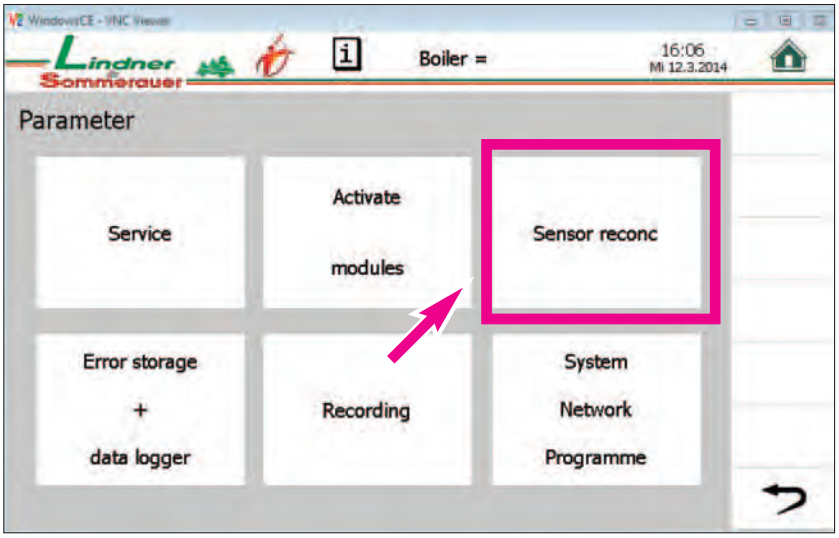


Fig. 9-430: Parameter, Overview

9.3.1 Sensor Reconciliation Heating Circuit

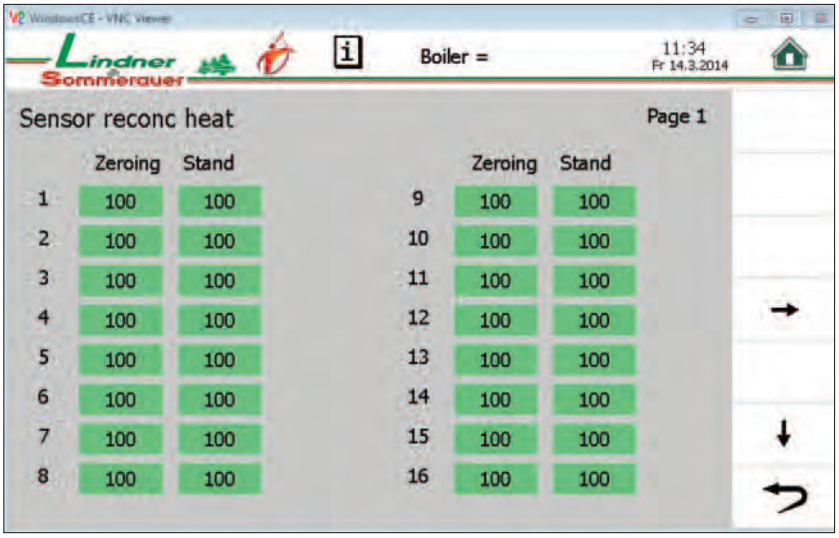


Fig. 9-440: Parameter, Sensor reconciliation heating circuit

If the indicated temperatures are not displayed correctly it is possible to correct the displayed value through zeroing (zero adjustment) resp. standardisation. By zeroing the lower limit is corrected, by standardisation the upper limit. If the adjustable value is corrected downwards the measured temperature will increase, if it is corrected upwards, the measured value will decrease.
Analogous to the procedure as described here, the sensor reconciliation will also function on the following pages.

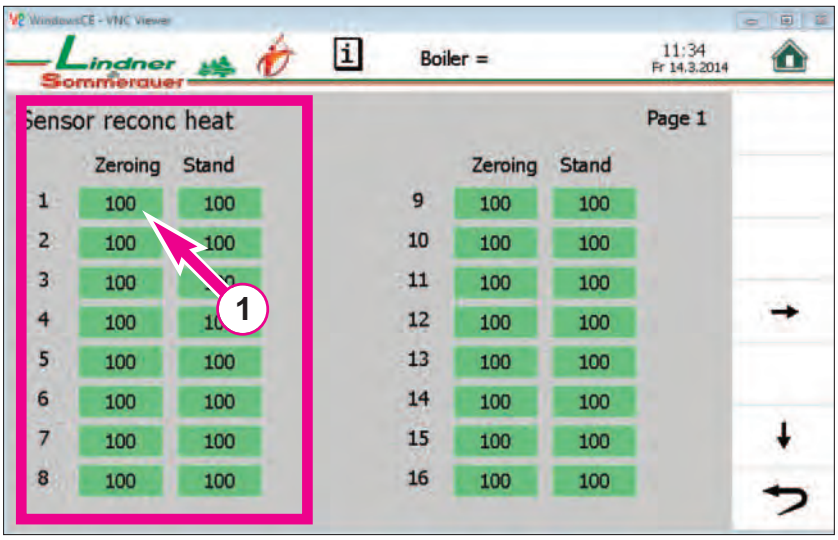


Fig. 9-450: Select the desired zeroing number field (1) ...

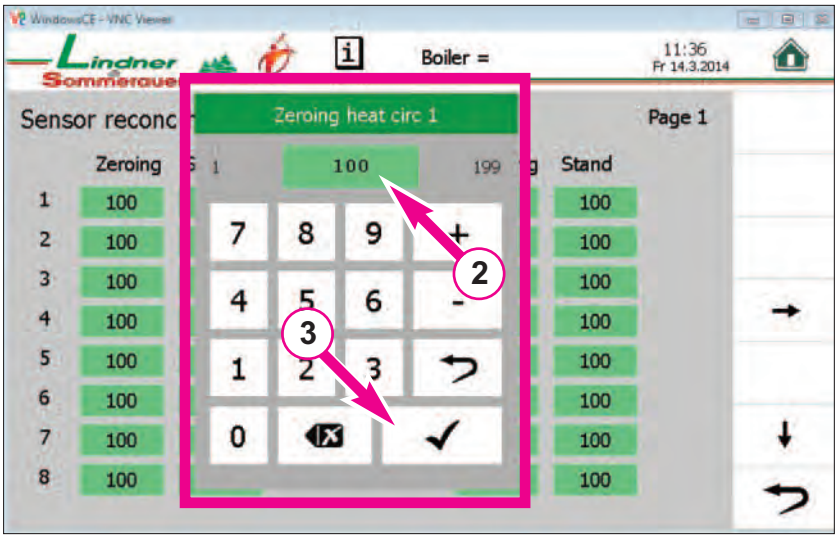


Fig. 9-460:... type in the value (2) and confirm with button (3)

Setting options - sensor reconciliation heating circuit		
Designation	**Setting option**	**Password level**
Zeroing	1-199	All (factory setting)
Standardisation	1-199	All (factory setting)

9.3.2 Sensor Reconciliation Room 1-16

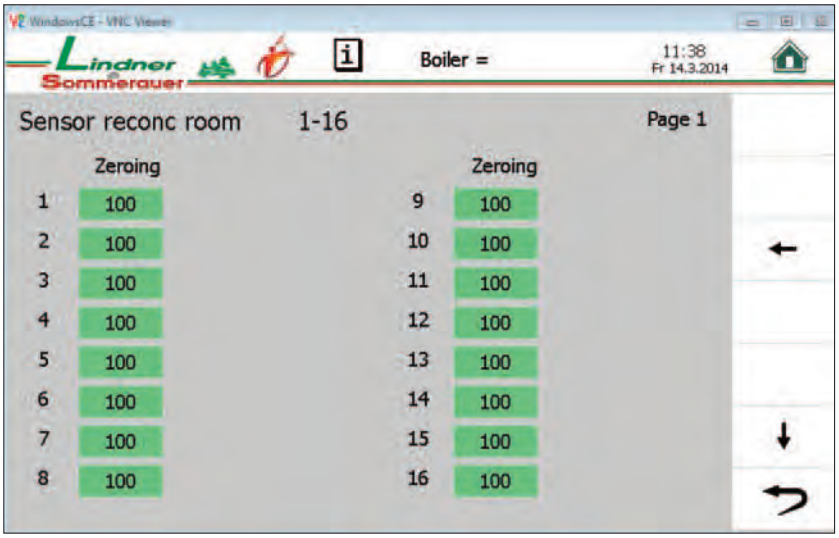


Fig. 9-470: Sensor reconciliation Room 1-16

9.3.3 Sensor Reconciliation DHW Tank

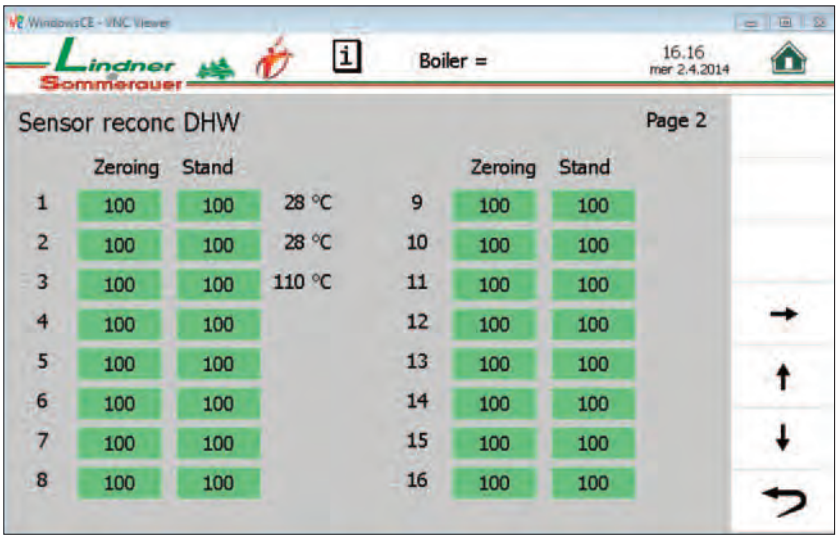


Fig. 9-480: Sensor reconciliation DHW tank

9.3.4 Sensor Reconciliation Storage

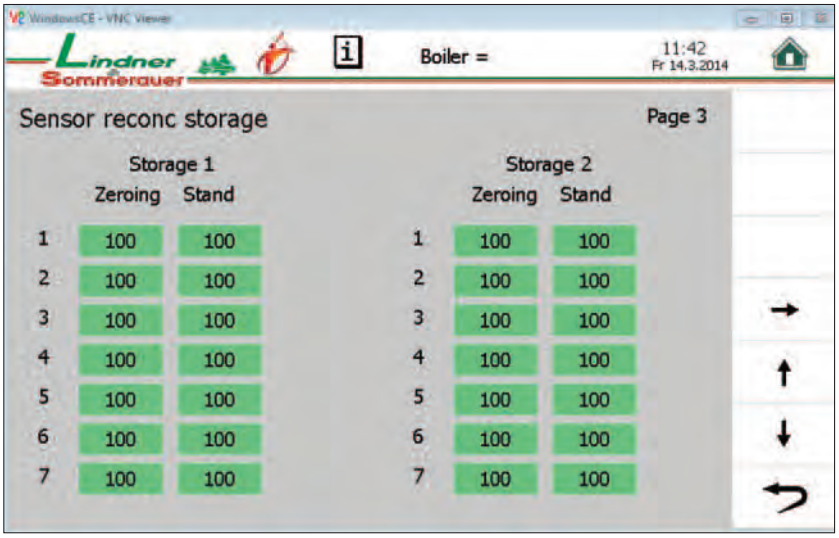


Fig. 9-490: Sensor reconciliation storage

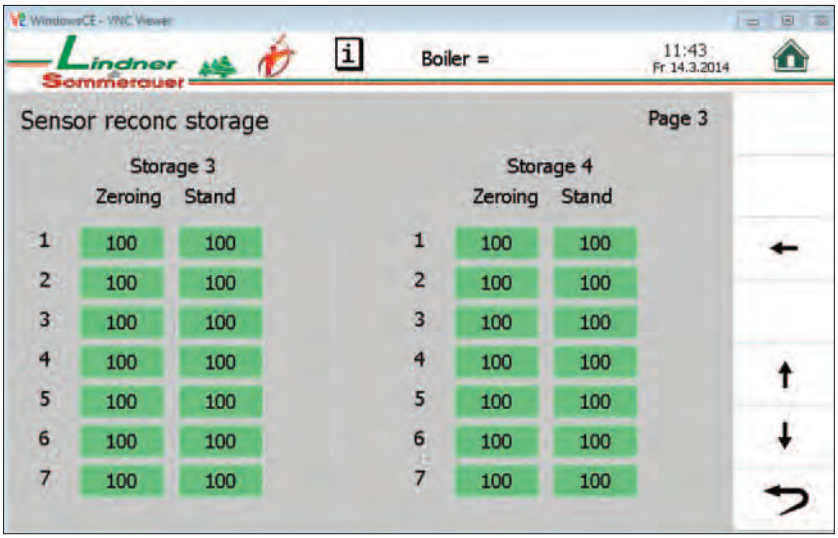


Fig. 9-500: Sensor reconciliation storage

9.3.5 Sensor Reconciliation Transfer/Network Mixer

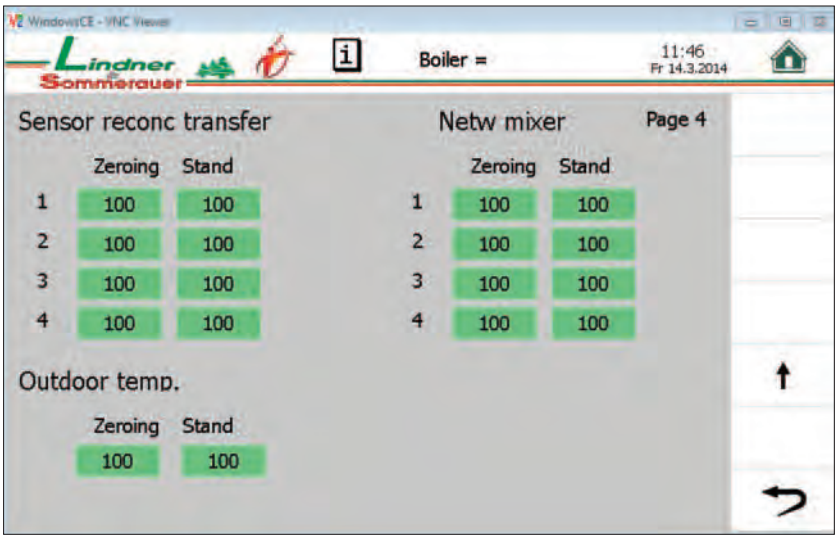


Fig. 9-510: Parameter, Sensor reconciliation transfer/network mixer

9.4 Error storage + Data Logger

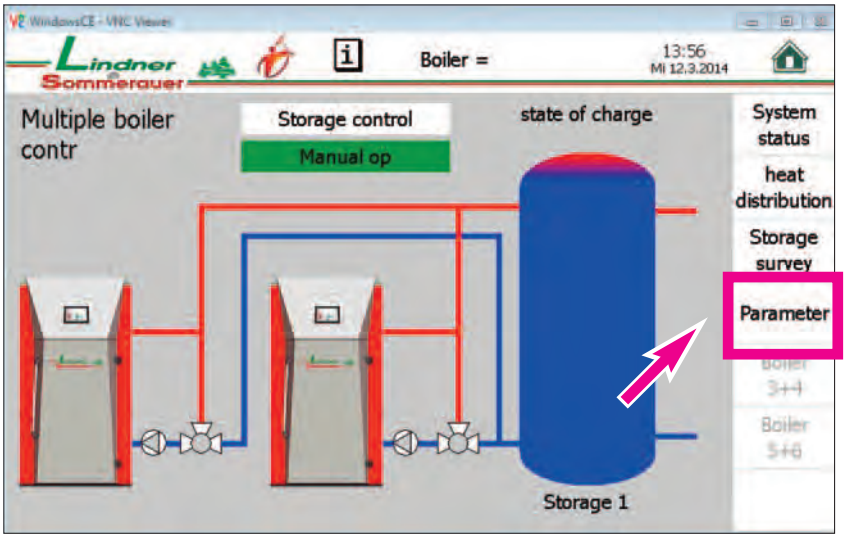


Fig. 9-520: Main menu

Parameter

In the data logger processes are to be recorded which are performed by the system (cleaning, ignition, regular operation, system Off by xxx, etc.). This makes it possible to trace and comprehend how the system is working. By clicking on the storage button the data logger resp. error storage can be exported on a USB flash drive.

Error storage: Here exclusively error messages are shown.

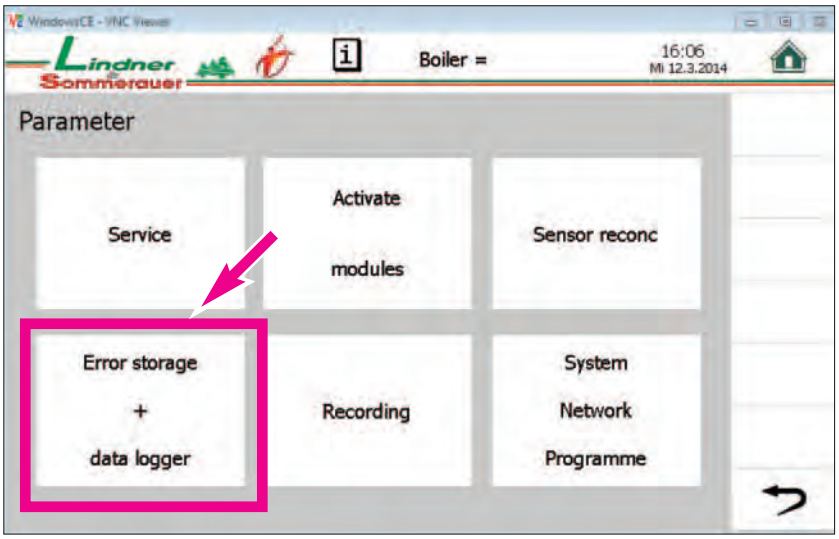


Fig. 9-530: Parameter, Error storage + data logger

9.4.1 Save Data Logger

Bild 9-540
1) Main switch to position 0

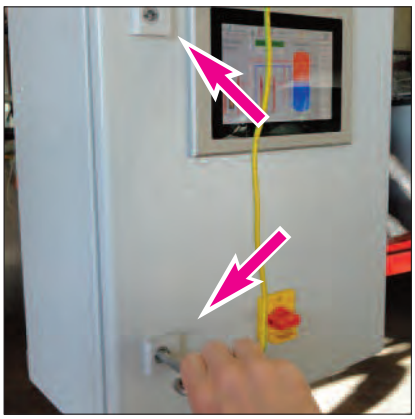


Bild 9-550
2) Unlock panel door

Bild 9-560
3) Open panel door and ...

Bild 9-570
4) ... plug in USB drive

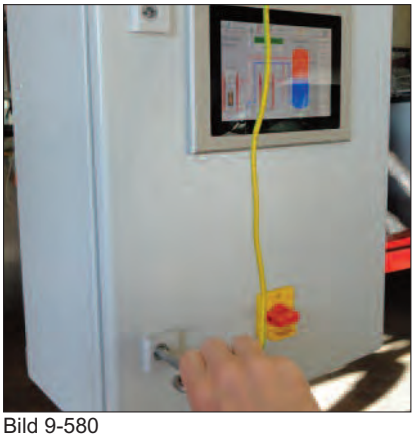
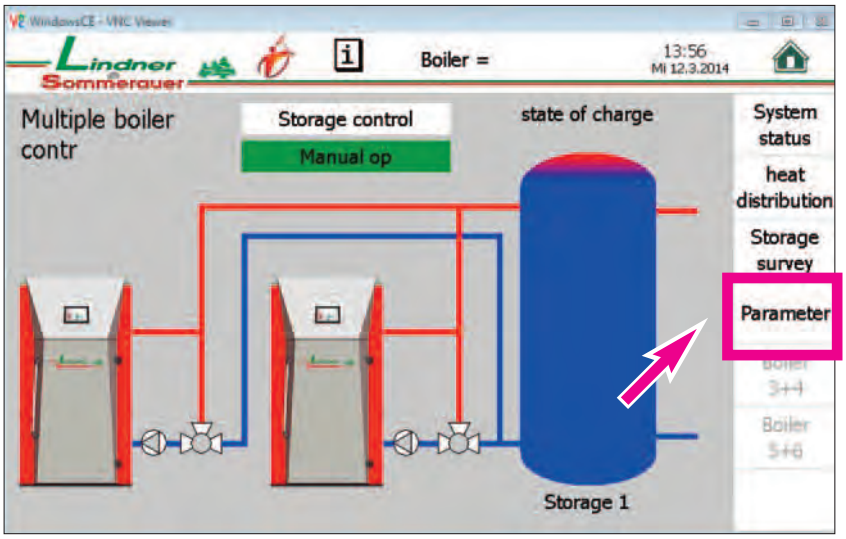


Bild 9-580
5) Close panel door ...

Bild 9-590
6) ... Main switch to position I



Parameter

Bild 9-600
7) Click on „Parameter“ button in main menu

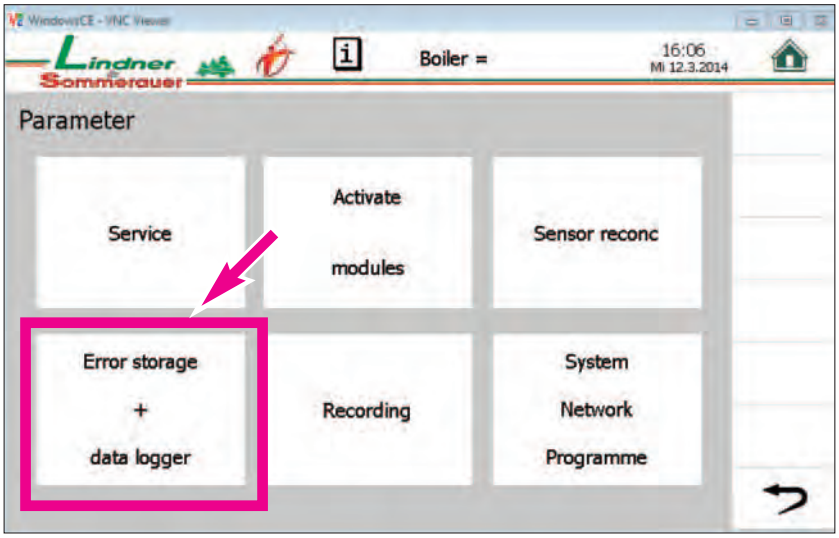


Bild 9-610
8) In the Parameter menu click on the „Error storage + data logger“ button

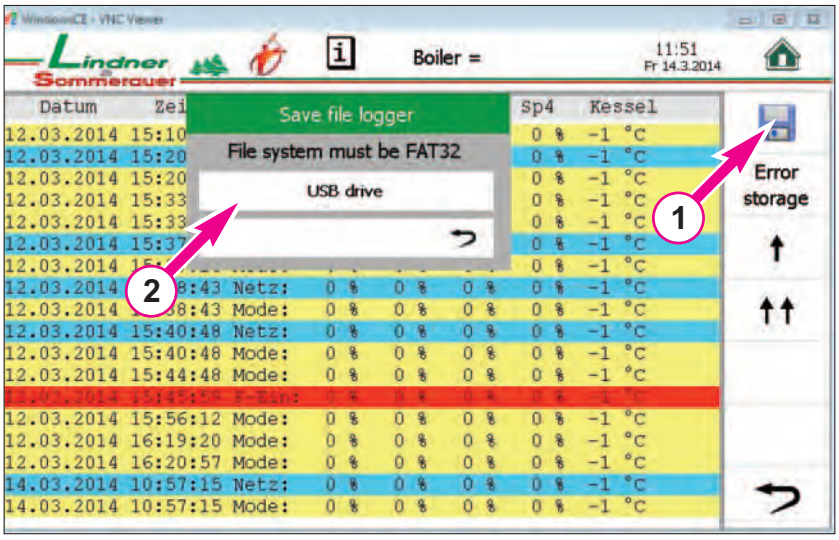


Bild 9-620
9) Click on the "save" symbol (1)
10) Click on „USB drive“ (2) (Saving completed)

9.4.2 Save Error storage

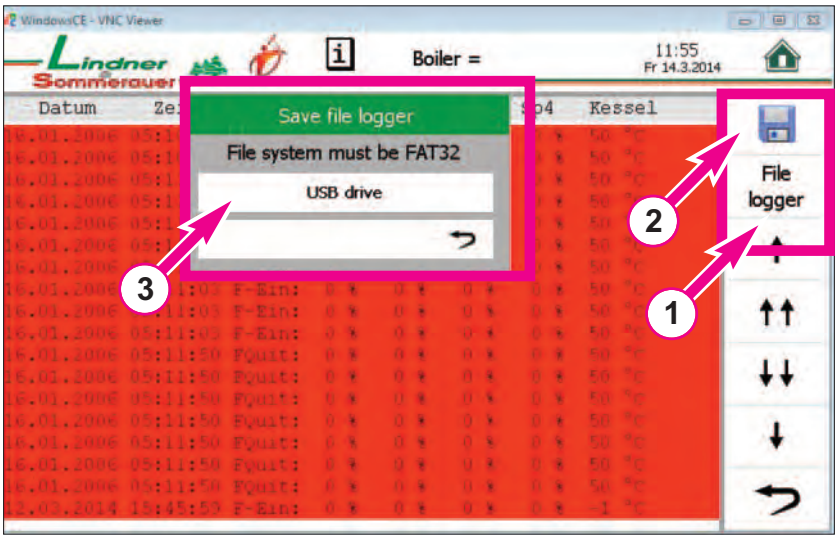


Bild 9-630
11) Select Error storage (1) and click on the "save" symbol (2)
12) Click on „USB drive“ (3) (Saving completed)

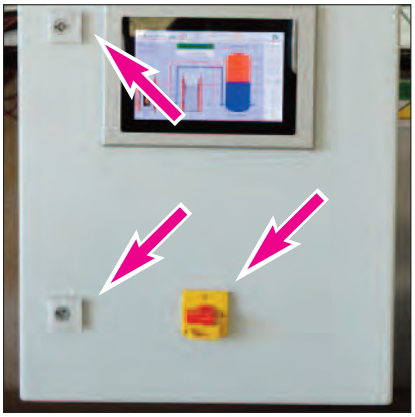


Bild 9-640
13) Main switch to position 0
14) Open panel door and ...

Bild 9-650
15) ... take out USB drive

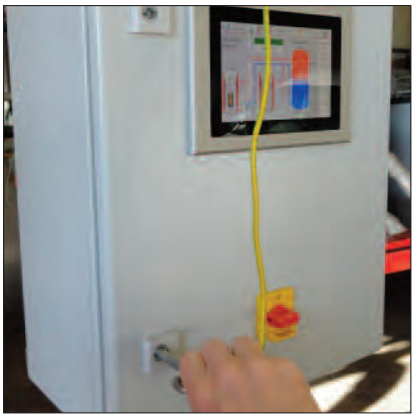
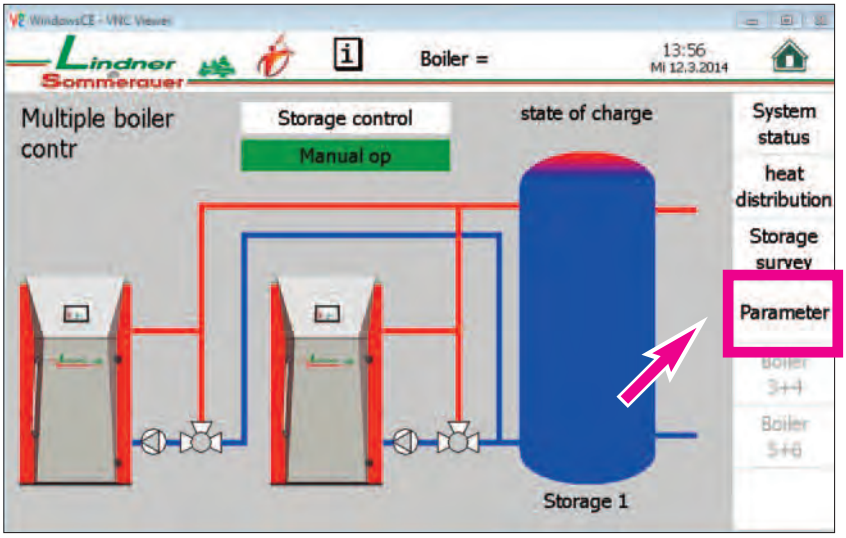


Bild 9-660
16) Close panel door

Bild 9-670
17) Main switch to position I

9.5 Recording



Parameter

Fig. 9-680: Main menu

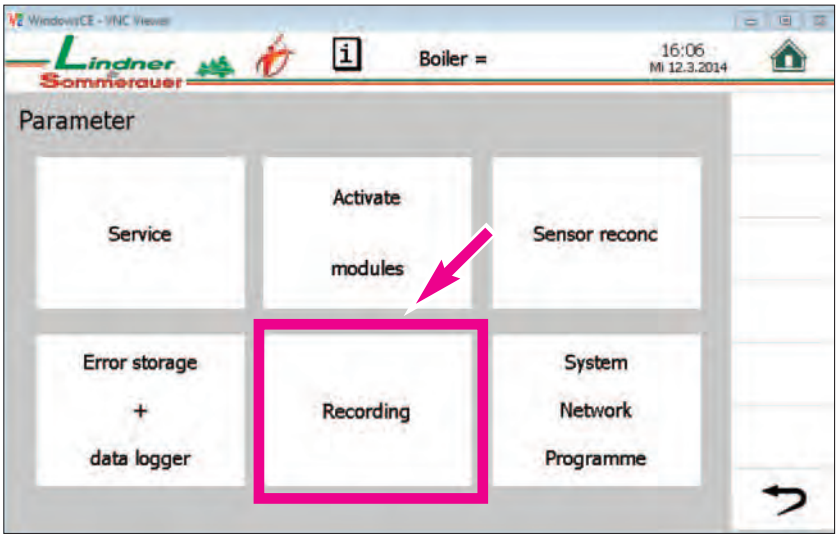


Bild 9-690: Parameter, Recording

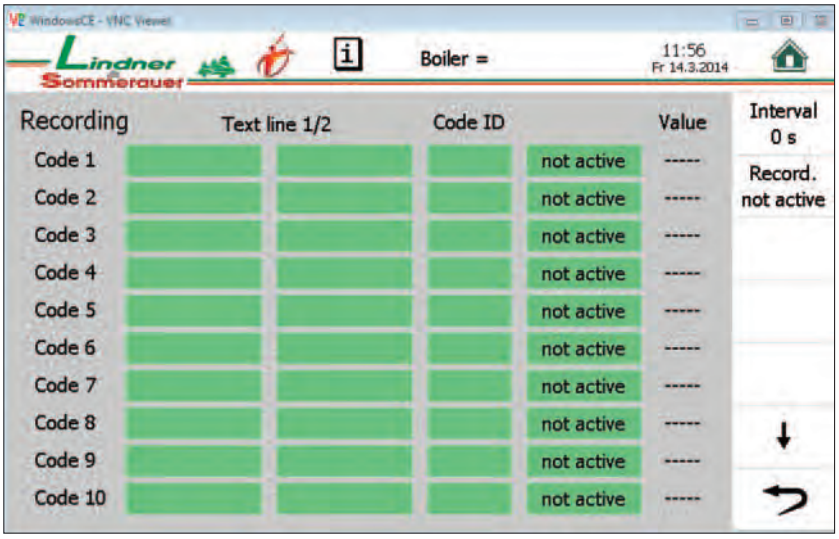


Bild 9-700: Parameter, Recording Code 1-60

9.6 System, Network, Programme

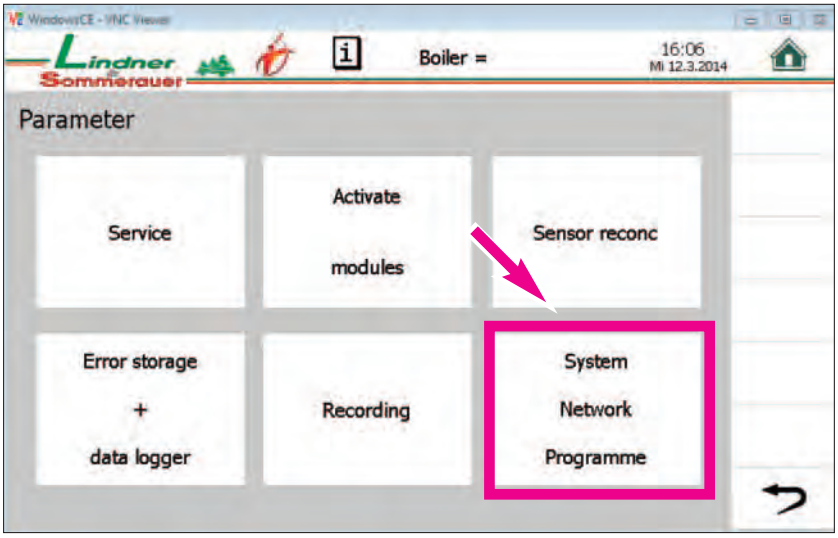


Bild 9-710: Parameter overview

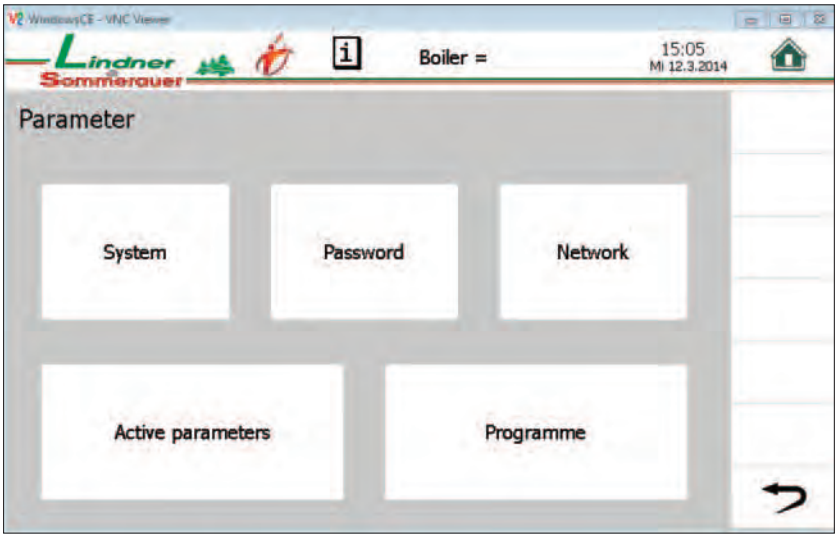


Bild 9-720:Parameter overview

Here you will find settings or information regarding the mentioned sub-terms.

9.6.1 Loading New Programme

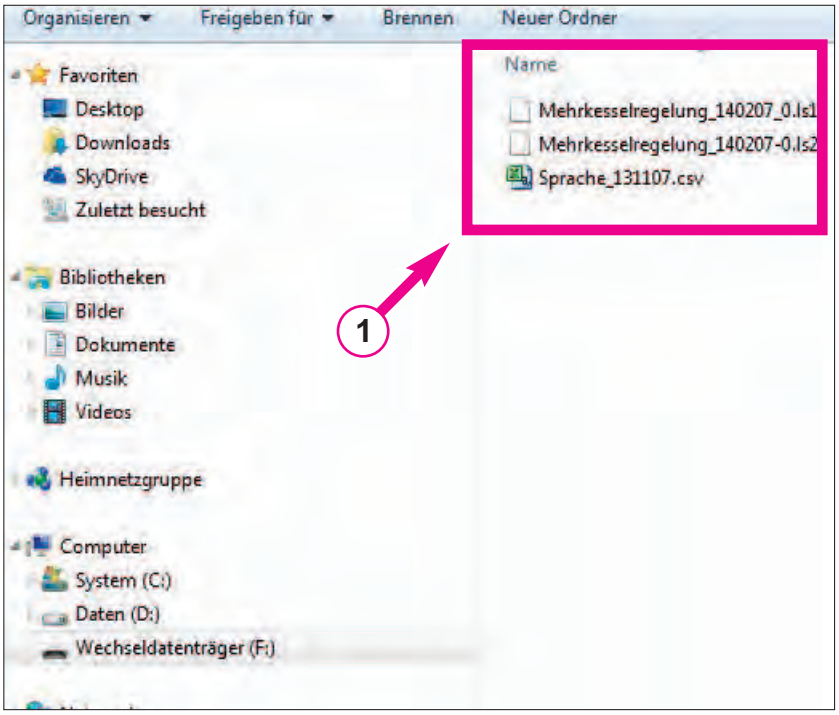


Bild 9-730: Saving programme

❶ Store the new programme on a USB drive

Please note: The USB drive may only contain the files as necessary for the update so that they are identifiable for the multiple boiler control system.

Fig. 9-740: Store programme on a USB drive

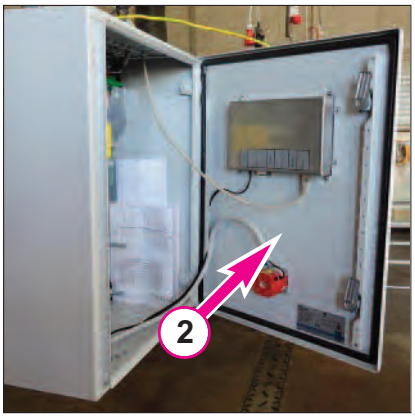


Bild 9-750

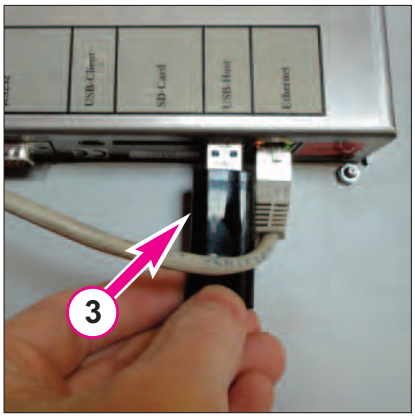


Bild 9-760

❷ Open door of multiple boiler control system

❸ Plug in USB drive

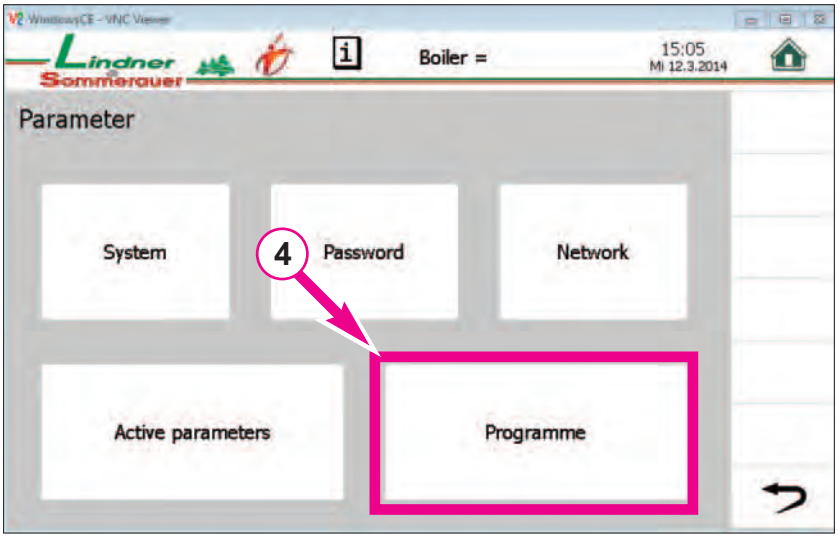


Bild 9-770: Parameter overview

❹ Click on „Programme“ field in menu

❺ Click on „Activate“ button

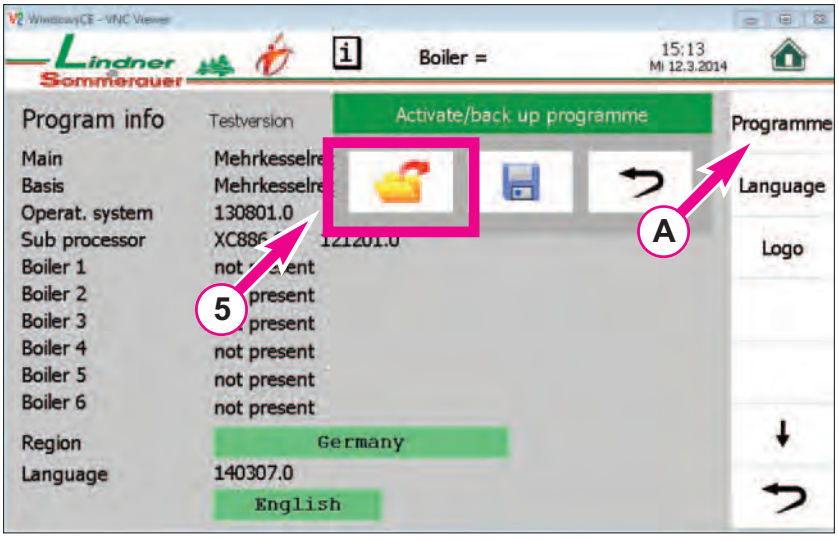


Bild 9-780: Programme info

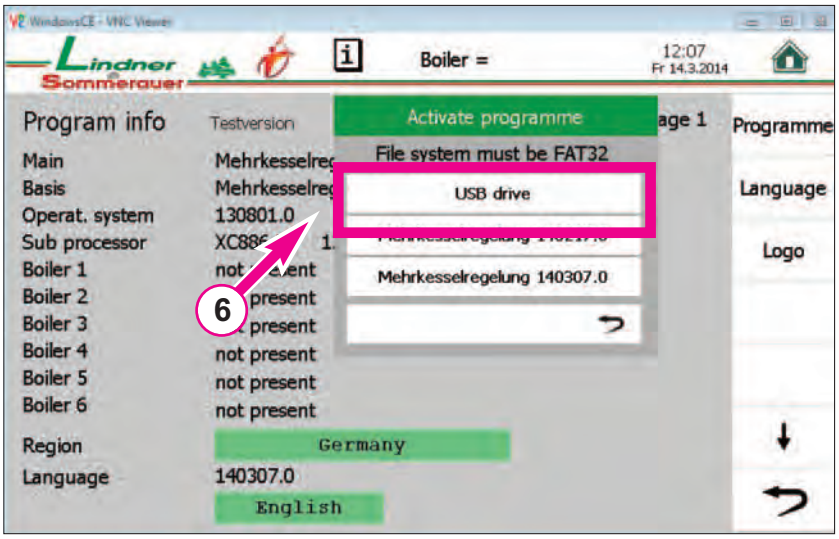


Bild 9-790: Activate programme

❻ Click on „USB drive“ button (Programme is loaded)

❼ Re-start system through the following dialogue field

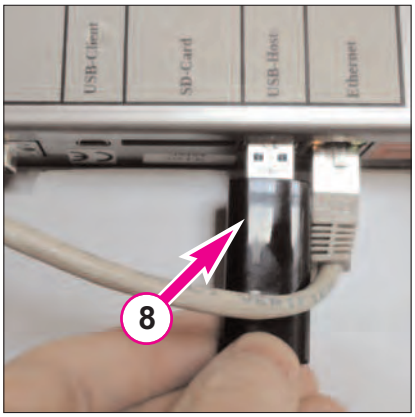


Bild 9-800

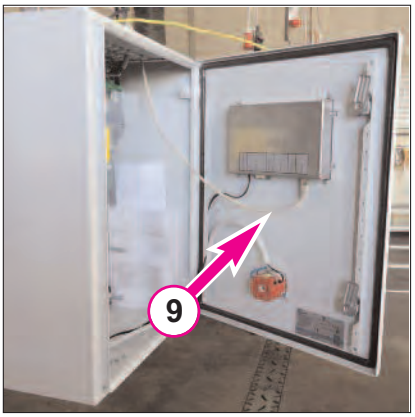


Bild 9-810

❽ Take out USB drive

❾ Close door

10

Technical Data

10.0 Technical Data

10.1 Interfaces

Interfaces	
❶ Power supply	12 V DC
❷ Serial	RS 232, D-sub - 9 pin
❸ CAN	IPN-CAN bus (up to 100m), RJ12 - 6 pin
❹ Mass storage device	SD (HC) card
❺ Mass storage device	USB 2.0
❻ Network	10/100 Mbps Ethernet, RJ45 - 8 pin

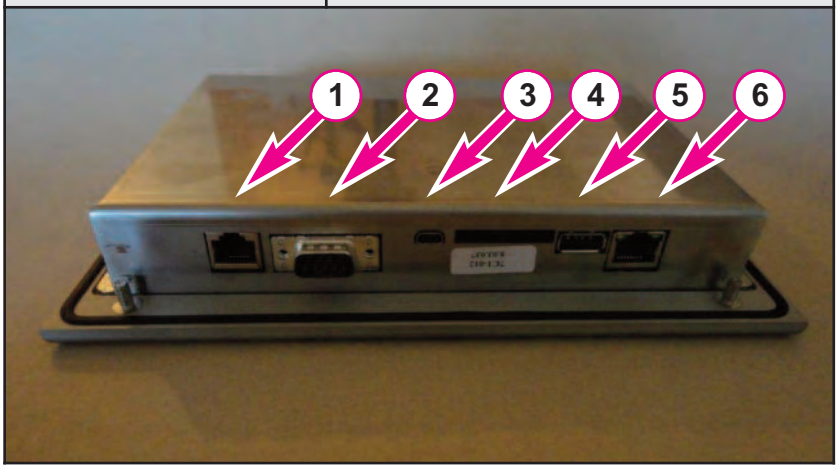


Fig. 10-010:Parameter overview

10.2 Display and Touch

Display and Touch	
Diagonal Diagonal	7,0“
Resolution (in pixels)	800 x 480 (WVGA)
Viewable area (mm)	154,4 x 94,4
Alignment	6 o'clock
Angle of view from	left, right, below: 70° above: 30°
LCD type	TFT + LED backlighting
Helligkeit	350 cd/m^2
Luminance Touch	Projected Capacitive Multi-touch (up to 5 fingers simultaneously)

10.3 Ambient Conditions

Ambient Conditions	
Storage temperature	-20°C up to + 55°C
Operating temperature	-10°C up to + 45°C
Humidity	10-90%, non-condensing
Protection	Front: IP 65 Cover: IP 20

10.4 Dimensions

Dimensions	
Width x Height x Depth (mm)	220 x 150 x 38
Installation opening (mm)	190 x 120
Permissible torque Fastening screws	1 Nm

10.5 Power supply

Power supply	
Voltage (12 V DC)	Min. 8V DC, Max. 18 V DC
Current consumption	Typ. 0,21 mA; 2,5 W,
Current Standby	Typ. 0,10 mA; 1,5 W
Real-time clock	Yes (7 days buffering with GoldCap)

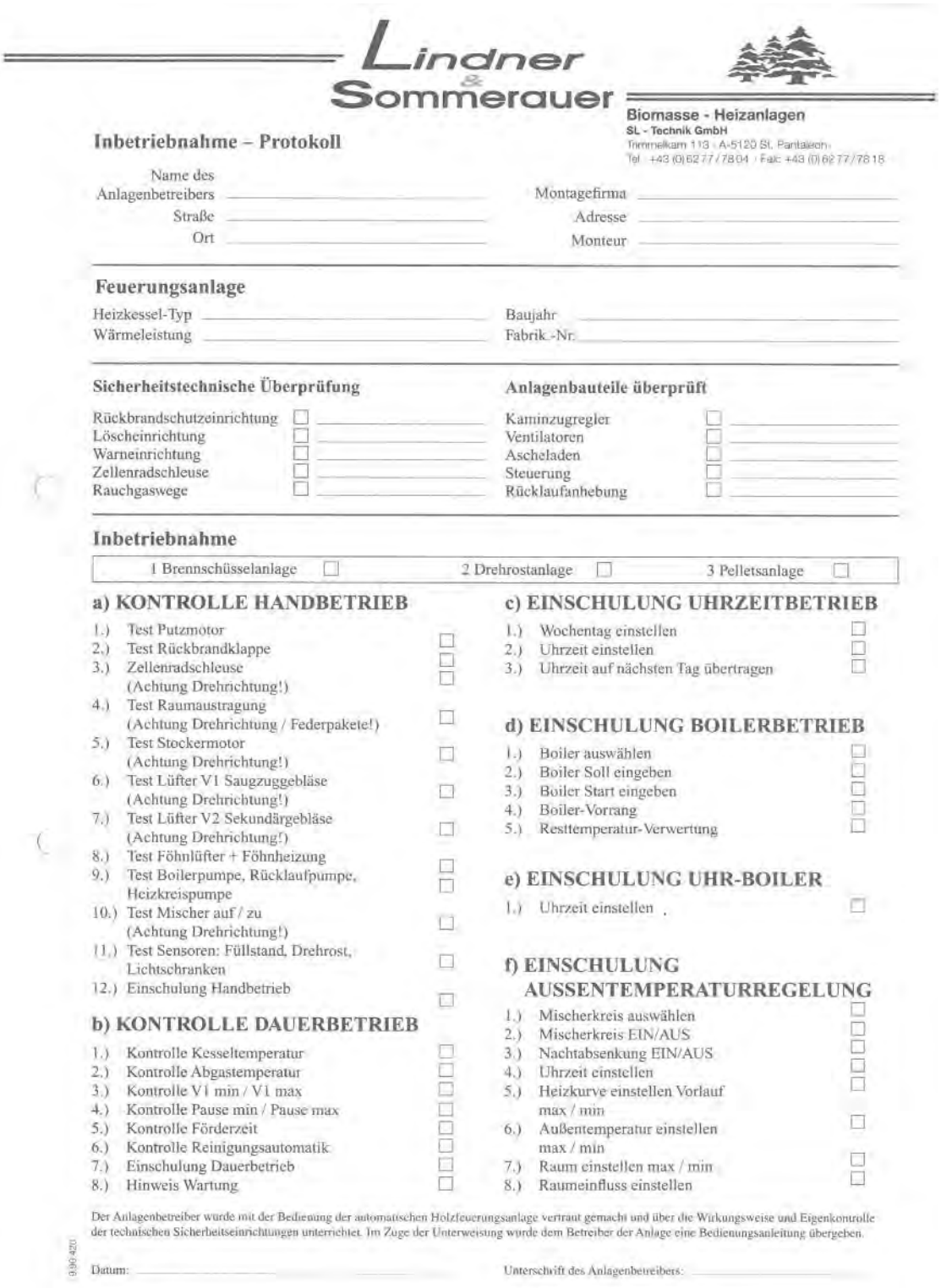
11

Initial Commissioning

11.0 Initial Commissioning

11.1 Commissioning Report

Upon initial commissioning a Commissioning Report (3-fold) was drawn up. Please take care and do not forget to return one copy to us in order to safeguard any possible warranty claims.



Lindner & Sommerauer

Biomasse - Heizanlagen
SL - Technik GmbH
Trimmelkam 113 · A-5120 St. Pantaleon
Tel. +43 (0) 62 77 / 78 04 · Fax: +43 (0) 62 77 / 78 18

Inbetriebnahme – Protokoll

Name des Anlagenbetreibers _____ Montagefirma _____
Straße _____ Adresse _____
Ort _____ Monteur _____

Feuerungsanlage

Heizkessel-Typ _____ Baujahr _____
Wärmeleistung _____ Fabrik.-Nr. _____

Sicherheitstechnische Überprüfung

Rückbrandschutzeinrichtung ☐ _____
Löscheinrichtung ☐ _____
Warneinrichtung ☐ _____
Zellenradschleuse ☐ _____
Rauchgaswege ☐ _____

Anlagenbauteile überprüft

Kaminzugregler ☐ _____
Ventilatoren ☐ _____
Aschelader ☐ _____
Steuerung ☐ _____
Rücklaufanhebung ☐ _____

Inbetriebnahme

1 Brennschüsselanlage ☐ 2 Drehrostanlage ☐ 3 Pelletsanlage ☐

a) KONTROLLE HANDBETRIEB

1.) Test Putzmotor ☐
2.) Test Rückbrandklappe ☐
3.) Zellenradschleuse ☐
(Achtung Drehrichtung!) ☐
4.) Test Raumaustragung
(Achtung Drehrichtung / Federpakete!) ☐
5.) Test Stockermotor
(Achtung Drehrichtung!) ☐
6.) Test Lüfter V1 Saugzuggebläse
(Achtung Drehrichtung!) ☐
7.) Test Lüfter V2 Sekundärgebläse
(Achtung Drehrichtung!) ☐
8.) Test Föhnlüfter + Föhnheizung ☐
9.) Test Boilerpumpe, Rücklaufpumpe, ☐
Heizkreispumpe
10.) Test Mischer auf / zu
(Achtung Drehrichtung!) ☐
11.) Test Sensoren: Füllstand, Drehrost, ☐
Lichtschranken
12.) Einschulung Handbetrieb ☐

b) KONTROLLE DAUERBETRIEB

1.) Kontrolle Kesseltemperatur ☐
2.) Kontrolle Abgastemperatur ☐
3.) Kontrolle V1 min / V1 max ☐
4.) Kontrolle Pause min / Pause max ☐
5.) Kontrolle Förderzeit ☐
6.) Kontrolle Reinigungsautomatik ☐
7.) Einschulung Dauerbetrieb ☐
8.) Hinweis Wartung ☐

c) EINSCHULUNG UHRZEITBETRIEB

1.) Wochentag einstellen ☐
2.) Uhrzeit einstellen ☐
3.) Uhrzeit auf nächsten Tag übertragen ☐

d) EINSCHULUNG BOILERBETRIEB

1.) Boiler auswählen ☐
2.) Boiler Soll eingeben ☐
3.) Boiler Start eingeben ☐
4.) Boiler-Vorrang ☐
5.) Resttemperatur-Verwertung ☐

e) EINSCHULUNG UHR-BOILER

1.) Uhrzeit einstellen ☐

f) EINSCHULUNG AUSSENTEMPERATURREGELUNG

1.) Mischerkreis auswählen ☐
2.) Mischerkreis EIN/AUS ☐
3.) Nachtabsenkung EIN/AUS ☐
4.) Uhrzeit einstellen ☐
5.) Heizkurve einstellen Vorlauf ☐
max / min
6.) Außentemperatur einstellen ☐
max / min
7.) Raum einstellen max / min ☐
8.) Raumeinfluss einstellen ☐

Der Anlagenbetreiber wurde mit der Bedienung der automatischen Holzfeuerungsanlage vertraut gemacht und über die Wirkungsweise und Eigenkontrolle der technischen Sicherheitseinrichtungen unterrichtet. Im Zuge der Unterweisung wurde dem Betreiber der Anlage eine Bedienungsanleitung übergeben.

Datum: _____ Unterschrift des Anlagenbetreibers: _____

9.90.420

12

Flowchart, Connection Diagram